



National Accounts of Well-being:

bringing real wealth onto the balance sheet

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nef (the new economics foundation) is a registered charity founded in 1986 by the leaders of The Other Economic Summit (TOES), which forced issues such as international debt onto the agenda of the G8 summit meetings. It has taken a lead in helping establish new coalitions and organisations such as the Jubilee 2000 debt campaign; the Ethical Trading Initiative; the UK Social Investment Forum; and new ways to measure social and economic well-being.



'If policy-makers are to make well-being a central objective they have to have ways of measuring it. So guidance on this is crucial. This is why this report is so important. It represents a valuable contribution to the search for a common system of measurement which could be widely used to change the basis on which policy is made.'

Professor Lord Richard Layard, November 2008

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Executive summary

'The Gross National Product counts air pollution and cigarette advertising, and ... the destruction of the redwood and the loss of our natural wonder in chaotic sprawl... Yet [it] does not allow for the health of our children, the quality of their education, or the joy of their play... the beauty of our poetry or the strength of our marriages... it measures everything, in short, except that which makes life worthwhile.'

Robert Kennedy, 1968

National Accounts of Well-being presents a radical, robust proposal to guide the direction of modern societies and the lives of people who live in them. It demonstrates why national governments should directly measure people's subjective well-being: their experiences, feelings and perceptions of how their lives are going. It calls for these measures to be collected on a regular, systematic basis and published as National Accounts of Well-being. The measures are needed because the economic indicators which governments currently rely on tell us little about the relative success or failure of countries in supporting a good life for their citizens.

Seventy-five years ago the original architects of systems of national accounts were clear that welfare could not be inferred from measures of national income alone. They were careful to document the range of factors national accounts failed to capture such as the unpaid work of households, the distribution of income and the depletion of resources. Yet initial hopes for the development of better indicators of welfare were fast derailed. The demands of wartime prioritised maximising the productive capacity of the economy over other considerations, at just the time when the accounting frameworks themselves were being refined and improved. The size of the economy – as defined by Gross Domestic Product – was quickly seized on as a convenient measure of national achievement. In the aftermath of the Second World War, overall productivity became firmly entrenched as the key hallmark of a country's overall success and widely interpreted as a proxy for societal progress, with damaging consequences for people and the planet.

Advances in the measurement of well-being mean that now we can reclaim the true purpose of national accounts as initially conceived and shift towards more meaningful measures of progress and policy effectiveness which capture the real wealth of people's lived experience.

As we enter a period of increasing economic, social and environmental uncertainty, this need becomes ever greater and more urgent. A myopic obsession with growing the economy has meant that we have tended to ignore its negative impacts on our well-being such as longer working hours and rising levels of indebtedness. It has created an economic system which has systematically squeezed out opportunities for individuals, families and communities to make choices and pursue activities which play a role in promoting positive well-being and human flourishing. All this is underpinned by a fiscal system which, as recent events have exposed, has run out of control. Add to this the fact that the model we have been following – of unending economic growth – is taking us beyond our environmental limits and the case for very different measures of human progress and policy evaluation become compelling,

National accounting indicators such as Gross Domestic Product (GDP) have only ever revealed a very narrow view of human welfare. Worse, they have obscured other vital parts of the economy: the core economy of family, neighbourhood, community and society, and the natural economy of the biosphere, our oceans

forests and fields. We now need to shift towards more meaningful measures of progress which capture the richness of people's lived experience. Do so and we also create a far more effective tool with which to guide policy.

This report aims to fundamentally re-evaluate orthodox ideas of what we should collectively value, and hence what we should measure. It lays out a framework for developing National Accounts of Well-being to provide:

- **A new way of assessing societal progress.** National Accounts of Well-being, by explicitly capturing how people feel and experience their lives, help to redefine our notions of national progress, success and what we value as a society.
- **A cross-cutting and more informative approach to policy-making.** The challenges now facing policy-makers, including the 'triple crunch' of financial crisis, climate change and oil price shocks, are unprecedented. Silo working has long been criticised; now – when the need for systemic change is clear and present – it must be overcome. National Accounts of Well-being – by capturing population well-being across areas of traditional policy-making, and looking beyond narrow, efficiency-driven economic indicators – provide policy-makers with a better chance of understanding the real impact of their decisions on people's lives.
- **Better engagement between national governments and the public.** By resonating with what people care about, National Accounts of Well-being provide opportunities for national governments to reconnect with their citizens and, in doing so, to address the democratic deficit now facing many European nations.

A framework for National Accounts of Well-being

Well-being is most usefully thought of as the dynamic process that gives people a sense of how their lives are going through the interaction between their circumstances, activities and psychological resources or 'mental capital'. Whilst a combination of objective and subjective factors are important for assessing well-being, it is the subjective dimensions which have, to date, been lacking in any assessment by national governments. National Accounts of Well-being address this gap.

The challenge is to match the multiplicity and dynamism of what constitutes and contributes to people's well-being with what gets measured. Our recommended framework for National Accounts of Well-being is therefore based on capturing:

- **More than life satisfaction.** Understanding subjective well-being as a multifaceted, dynamic combination of different factors has important implications for the way in which it is measured. This requires indicators which look beyond single item questions and capture more than simply life satisfaction.
- **Personal and social dimensions.** Research shows that a crucial factor in affecting the quality of people's experience of life is the strength of their relationships with others. Our approach, therefore, advocates a national accounting system which measures the social dimension of well-being (in terms of individuals' subjective reports about how they feel they relate to others) as well as the personal dimension.
- **Feelings, functioning and psychological resources.** The traditional focus on happiness and life satisfaction measures in well-being research has often led to an identification of well-being with experiencing good feelings and making positive judgements about how life is going. Our framework for National Accounts of Well-being moves beyond that to also measure how well people are doing, in terms of their functioning and the realisation of their potential. Psychological resources, such as resilience, should also be included in any national accounts framework and reflect growing recognition of 'mental capital' as a key component of well-being.¹

These elements have been incorporated to produce empirical findings from a working model of National Accounts of Well-being. The findings are compiled from data collected in a major 2006/2007 European cross-national survey through a detailed module of well-being questions, designed by the University of Cambridge,

nef (the new economics foundation) and other partners. This represents the most comprehensive dataset on subjective well-being for any nation to date.

Our working model is built on two headline measures which capture personal well-being and social well-being, reflecting crucial aspects of how people experience their lives. Personal well-being is broken down into five main components with a number of subcomponents: emotional well-being (positive feelings and absence of negative feelings); satisfying life; vitality; resilience and self-esteem (self-esteem, optimism and resilience); and positive functioning (which covers autonomy, competence, engagement, and meaning and purpose). Social well-being is made up of two main components: supportive relationships, and trust and belonging. In addition to these indicators, an example of a well-being indicator within a specific area of people's lives was also created – a satellite indicator of well-being at work. This measures job satisfaction, satisfaction with work-life balance, the emotional experience of work, and assessment of work conditions.

To enable analysis of how different nations are faring in relation to their well-being, indicators were created by standardising and transforming the data so that all results are presented on 0–10 scales, with a score of 5 always representing the average score across the 22 European countries included in the dataset.

Findings from our working model

nef's National Accounts of Well-being reveal some surprising results in the picture of the relative progress of European countries. Thus, whilst Denmark retains its oft-cited position as having the highest levels of well-being in Europe, other rankings of countries on personal and social well-being deviate from what might be expected. Sweden, for example, so often singled out to be praised for its policy success is within the top five nations on social well-being, but does not feature as one of the highest performers regarding the personal well-being of its citizens.

The findings reveal:

- **Countries with high levels of personal well-being do not necessarily have high levels of social well-being, and vice versa.** Denmark and Ukraine display unusual stability in coming at the very top and very bottom, respectively, of rankings based on both personal and social well-being scores. In between them, all but two of the other twenty countries change positions. It is striking, for example, that all the Central and Eastern European countries except Slovenia have higher scores for social than for personal well-being and the Iberian nations Portugal and Spain have considerably greater average levels of social well-being than personal well-being. A key task for policy-makers highlighted by this finding is therefore one of identifying the economic, social, and political structures in these countries which succeed in promoting the elements of social well-being beyond the levels expected from examining personal well-being.
- **Scandinavian countries are the top performers on overall well-being, whilst Central and Eastern European countries have the lowest well-being.** When combining personal and social well-being into an overall index of well-being for each country – using a weighting of 2:1 – we see that Denmark, Switzerland and Norway show the highest levels of overall well-being, whilst Central and Eastern European countries such as the Ukraine, Bulgaria and Hungary have the lowest. The UK is ranked 13th, out of 22 European nations, when combining its personal and social well-being scores. Despite its relative economic success at the time the survey data were collected, this summary measure therefore reveals the UK's distinctly middling performance on well-being overall.
- **Levels of well-being inequality vary considerably between nations.** Whilst there is no consistent link between the overall level of personal or social well-being in a country and the degree to which levels of well-being are equally dispersed within the population, it is clear that some countries experience higher levels of well-being inequality than others. For example, whilst Austria and Switzerland have similar average levels of personal well-being, in Switzerland there is relatively little variation in those levels between individuals, whereas in Austria there are many more individuals at both the high and low ends of the scale. For both social and personal well-being, many of the highest levels of

Personal well-being

measures people's experiences of their positive and negative emotions, satisfaction, vitality, resilience and self-esteem and sense of positive functioning in the world.

Social well-being measures people's experiences of supportive relationships and sense of trust and belonging with others.

dispersion are in Central and Eastern European countries, but it is noteworthy that Austria, Belgium and the UK have similarly high levels of dispersion. This raises an important question for societies to consider: what level of well-being inequality, if any, is ever justifiable?

In order to understand the constituents of well-being more fully, we developed diagrams – Well-being Profiles – which display the character of well-being for a particular country or group. These allow the different components of well-being to be examined and implications for policy-makers drawn out, and demonstrate that:

- **Well-being Profiles reveal remarkable variation across European nations.** For example, Estonia, Portugal and Hungary are ranked closely on the headline personal well-being scores, but display very different pictures of well-being. Estonia's Well-being Profile shows it scoring at or slightly below the European average for each well-being component, but without any scores that stand out as extremely low compared to the others. Portugal shows a more mixed picture, while Hungary shows some particularly marked contrasts, with a very low score for emotional well-being – absence of negative feelings and a considerably above-average score for trust and belonging.
- **Comparing Well-being Profiles helps to uncover differences in countries which are similar on other measures of national welfare.** For example, Finland and France have very similar levels of GDP per capita and have the same score on the UN's Human Development Index (which combines measures of GDP, life expectancy and knowledge and education), but France ranks substantially below Finland on both personal and social well-being. Finland's Well-being Profile shows it coming only slightly above average on all components of well-being, apart from the emotional well-being – negative feelings and satisfying life components, where its performance is substantially above average. A similar pattern can in fact be seen in the Well-being Profiles of each of the Scandinavian countries. France's Well-being Profile, on the other hand, presents a much more consistent picture, with scores close to the average on all well-being components, and none that are particularly high or low. Well-being Profiles therefore provide a clear picture of how policy to bolster population well-being in each country might need either to be closely targeted on particular components, or aimed at improving well-being more generally.

Further important policy-relevant findings come from examining well-being within specific national contexts, and from looking at the relationship between the objective circumstances of people's lives and their well-being:

- **Within the UK, clear differences emerged in the character of people's well-being between population groups.** The Well-being Profiles of the youngest and oldest age groups in the UK reveal some striking differences in their well-being composition and levels with particular disparity for the trust and belonging component, with a very low score for the youngest age group and a high score for the oldest. A question for UK policy-makers is therefore whether they should specifically aim to build feelings of trust and belonging among young people, or, understanding that these feelings change through the life course, target their resources elsewhere?
- **The relationship between the conditions of people's lives and their subjective experiences of life is complex and demands a textured assessment of well-being to be fully understood.** Some objective factors have fairly consistent relationships with all the components of well-being. For example, volunteering is associated with moderately increased scores on all components of personal well-being. Similarly, being hampered in daily activities by being ill or disabled is associated with decreased scores, although with stronger effects for components of personal rather than social well-being. Other objective circumstances and behaviours, however, relate differently to the different components. For instance, spending more time watching television predicts decreased scores for the satisfying life, vitality, functioning and trust and belonging components, but not for emotional well-being, resilience or supportive relationships. The results suggest that reducing deficits (e.g. illness, involuntary unemployment, fear of crime) remains an important goal of national level policy-

making if population well-being is to be enhanced. They also show, however, that promoting positive well-being has a vital role to play, for example by encouraging intrinsic values, trust in institutions and participation in local activities.

Where do we go from here?

We are not alone in recognising the need for, and calling for, a new approach. There is a burgeoning international movement questioning the utility of economic indicators and exploring what it might mean to capture true measures of well-being, not simply material wealth. In January 2008 the French President Nicholas Sarkozy set up a special commission on the measurement of economic performance and social progress. Earlier, in 2005, the prominent UK economist Richard Layard called on governments to monitor the well-being of their citizens. Layard's highly influential book *Happiness* argued that the economic model of human nature used by policy-makers is 'far too limited' and that '[h]appiness should become the goal of policy, and the progress of national happiness should be measured and analysed as closely as the growth of GNP.'² In 2007 the UK Conservative Party's Quality of Life Policy Group noted that 'in wealthy countries, a continuing increase in economic growth, is not increasing wellbeing' and advocated the development of a 'more reliable indicator of progress than GDP'.

This is matched by considerable support among the public for governments to use broader measures of progress. A UK poll found 81 per cent of people supported the idea that the Government's prime objective should be the 'greatest happiness' rather than the 'greatest wealth'.³ Similarly, an international survey found that three-quarters of respondents believed that health, social and environmental statistics were as important as economic ones and should be used to measure national progress.⁴

Creating a system of National Accounts of Well-being, however, is an ambitious and significant undertaking that will ultimately require extensive co-operation between governments, academics, citizens and many others. The framework presented in this report, and upon which the working model and empirical findings are based, represents the first serious attempt to describe what National Accounts of Well-being might look like, which we hope will be further built on and developed.

A number of key recommendations are identified in the report to stimulate further debate and action.

Actions for national governments

● **Make manifesto commitments to National Accounts of Well-being**

National governments and political parties across Europe should pledge a manifesto commitment to introduce new measures of progress and, more particularly, to adopt National Accounts of Well-being. In the UK, **nef** is seeking a manifesto commitment from all three of the major political parties to develop National Accounts of Well-being.

● **Task national statistical offices to measure well-being**

Listening to, learning from and building the capacity of our statistical experts in the drive towards National Accounts of Well-being is crucial. We recommend the establishment of a well-being network of national statistics bodies bringing together senior statisticians and analysts from across Europe's national statistical offices and from Eurostat, the statistical office for Europe. The role of the network should be to advise on the development of National Accounts of Well-being, to shape the implementation of well-being indicators in national surveys, and to work alongside policy-makers to explore how the results might be used in practice.

● **Measure and act on well-being within the broader context of societal and environmental sustainability**

The broader context to National Accounts of Well-being must be a continued feature of discussion and action as they are further developed. This report focuses specifically on people's subjective well-being and quality of life. However we do not claim this to be the only goal worth pursuing or one which should be elevated to the detriment of specific population groups, future generations or the ecosystem on which we all depend. **nef**'s vision is that efforts to take forward the measurement of people's well-being are situated within a broader framework, also concerned with social justice and environmental

sustainability. There is therefore a need for ongoing work to identify how to best operationalise a multilayered, broad framework of indicators which combines these elements to measure progress and inform policy.

Developing global, regional and local momentum

- **Encourage the European Parliament and European Commission to take a leading role**

As representatives of citizens' views at a European level, MEPs need to ensure effective engagement with citizens around the issue of well-being and commit to action, both in the run-up to the European Parliamentary elections in June 2009 and beyond. The European Council also has a role to play in this issue by encouraging co-operation between member states; implementing well-being-based key progress indicators at EU level; and fostering discussion of related international initiatives, such as the outcomes from the OECD Global Project on 'Measuring the Progress of Societies' and results from the Stiglitz Commission when it reports in April 2009.

- **Promote greater dialogue between international, national and local actors in the development of well-being accounts**

Alongside the work taking place to develop National Accounts of Well-being, substantial activity around the measurement of well-being is also evident at supra-national and sub-national levels. We encourage the assessment of well-being at these different spatial scales and urge further dialogue and joined up action amongst all those involved in taking this forward, both within and between countries to explore whether, for example, there are some components of population well-being which are of greater relevance at a local level compared to national level, or vice versa and how best to keep the public informed about the outcomes of well-being measurement at different scales in ways which are clear, accessible and of interest.

Achieving broad engagement across society

- **Mobilise public support**

In order to exert political pressure and to stimulate debate about the role of well-being measures in matters of national policy, greater mobilisation of the public is required. There is a need to find effective mechanisms to engage the public on this issue and to communicate about it in a way which highlights its relevance to people's day-to-day life. To support this process, the accompanying website allows individuals to measure their own well-being and compare it to national results, and to join the call for their national government to systematically measure well-being.

- **Stimulate further exploration, analysis and dialogue about both the early findings and potential structure of National Accounts of Well-being**

Through this report **nef** has started to explore these issues but there is much more to learn from the data on national well-being and further debate to be had about how this can best be brought together in ways useful for policy. Building on this report, we must now facilitate researchers, analysts, policy-makers, citizens, parliamentarians, media officials, non-governmental organisations (NGOs) and others to come together to engage in international and national dialogue about the what, why and how of National Accounts of Well-being.

The interactive website – www.nationalaccountsofwellbeing.org – which sits alongside this report will, we hope, facilitate this dialogue. We invite everyone with an interest in the future of our society and the quality of people's experience of life to visit the site to explore the national accounts framework, indicator components, and data in more detail, and to contribute to discussions about making National Accounts of Well-being a reality.

The ideas outlined in this report regarding the development of National Accounts of Well-being speak to the very heart of what it is we value as a society, calling for a fundamental rethink about our notions of progress and a transformation in the way in which we plan, deliver and evaluate policies which aim to improve people's lives. We now have compelling evidence to show that our current economic model and economic accounting frameworks are hugely limited, and that a shift to measuring success in terms of well-being is not only desirable, but necessary, if societies are to truly flourish.

1. Introduction

This report makes a radical proposal to guide the direction of modern societies and the lives of people who live in them. It says that national governments should directly measure people's subjective well-being: their experiences, feelings and perceptions of how their lives are going. These measures should be collected on a regular, systematic basis and published as National Accounts of Well-being.

This proposal is inspired by the established national accounting systems that governments currently use to track aspects of their countries' economic activity. However, it rejects measures of economic activity as sufficient to fully assess the progress of nations. It is a call to fundamentally re-evaluate established ideas of what we should collectively value, and hence what we should measure.

Modern nations pay huge attention to the state of their finances. Maintaining an ever-growing economy is considered to be of vital importance for national progress and prestige. But a famous speech made by the then US presidential candidate Robert Kennedy in 1968 makes clear how narrow a picture is presented by a focus on economic indicators alone:

*'The Gross National Product counts air pollution and cigarette advertising, and ambulances to clear our highways of carnage. It counts special locks for our doors and the jails for the people who break them... It counts the destruction of the redwood and the loss of our natural wonder in chaotic sprawl... Yet the gross national product does not allow for the health of our children, the quality of their education, or the joy of their play. It does not include the beauty of our poetry or the strength of our marriages, the intelligence of our public debate or the integrity of our public officials... it measures everything, in short, except that which makes life worthwhile.'*⁵

The key point is that giving things an economic value does not entail that they should be, or are in practice, valued by society. Measuring progress solely in economic terms misses the key fact that the economy is a means to an end, not an end in itself. A strong and healthy economy may be desirable, but it is desirable because it allows us to get on with doing the things that are really important: living happy, fulfilling lives.

Once our basic needs are met, aiming for additional wealth does not represent an efficient way to significantly increase well-being. In addition, the model of unending economic growth which we have been following is taking us beyond our environmental limits. In this light, the case for very different drivers of human progress becomes compelling. This report proposes regular National Accounts of Well-being as one of the key measures which, alongside a greater understanding of the strain that our resource use places on the ecosystem, will help to better orient humanity as we enter into an era of increasing economic, social and environmental uncertainty.

What is well-being?

Achieving well-being has been the concern of philosophers since Aristotle, and is, in many respects the essence of human existence. In recent years, well-being has

moved from the realm of philosophy to that of science. There has been a growing body of research into what contributes to the quality of people's experiences of their lives. This has enabled a new understanding of the factors that both influence and constitute well-being. The science of 'subjective well-being' suggests that as well as experiencing good feelings, people need: a sense of individual vitality; to undertake activities which are meaningful, engaging, and which make them feel competent and autonomous; and a stock of inner resources to help them cope when things go wrong and be resilient to changes beyond their immediate control. It is also crucial that people feel a sense of relatedness to other people, so that in addition to the personal, internally focused elements, people's social experiences – the degree to which they have supportive relationships and a sense of connection with others – form a vital aspect of well-being.⁶

Academic debate continues about precisely how 'well-being' should be defined, particularly regarding the distinction between factors that are fundamental parts of the concept itself and those that are necessary for, but external to, well-being. This debate is interesting, but for our purposes it is not essential to address all of its finer points. *All* of the elements cited above play a role in ensuring that people feel their lives are going well, although their importance may vary as circumstances change. Well-being is best thought of as a dynamic process, emerging from the way in which people interact with the world around them.⁷ Because of this dynamic nature, high levels of well-being mean that we are more able to respond to difficult circumstances, to innovate and constructively engage with other people and the world around us. As well as representing a highly effective way of bringing about good outcomes in many different areas our lives, there is also a strong case for regarding well-being as an ultimate goal of human endeavour.

Why we need National Accounts of Well-being

It is clear that economic measures can only ever be a limited proxy for the richness of our lived experience. But a myopic obsession with growing the economy has meant that we have tended to ignore the negative well-being implications of the longer working hours and rising levels of indebtedness which it has entailed. In the process we have also squeezed the time and space we allow ourselves for pursuit of all the other activities which we know promote positive well-being and human flourishing. Facilitated by a fiscal system that has been allowed to operate with very few checks and balances, the focus on 'growth at any cost' created the giant credit bubble whose collapse has led to the recent global financial turmoil. As we all face up to the reality of an increasingly turbulent future, one where GDP growth may simply not be an option, the need to focus policy on the things that really matter – achieving well-being within the limits set by the Earth's resources – becomes ever more pressing. Paying direct attention to the well-being of populations is the only way in which societies can truly assess whether the lives of their members are going well, or badly. And, since our well-being underpins our collective resilience, and thus our ability to effectively respond to rapid societal changes, in the current context this assessment becomes not just desirable, but critical.

Because well-being is multifaceted and dynamic, we need a comprehensive system of accounts that allows for rigorous and nuanced measurements of people's experience of life – their subjective well-being. These accounts must be able to withstand the scrutiny to which headline measures of national performance are regularly (and rightly) subjected. Just as importantly, they must reveal useful information that can be used to inform better policy-making, and better orient our lives.

The data which would allow the construction of regularly updated National Accounts of Well-being do not currently exist. However, the exercise of constructing a first set of draft accounts has been made possible by a detailed new assessment of well-being designed by the University of Cambridge, **nef** and other partners, included within a major European cross-national survey. Using the resulting data, **nef** has constructed indicators that summarise different elements of people's lived experience at various levels of aggregation.

This report lays out our framework and includes some results from preliminary analysis of the data. These results provide an illustration of how national well-being

accounts might allow different elements of experienced quality of life to be explored at different levels of detail for population groups between and within countries. They present the most detailed data on well-being for any nation to date, and facilitate comparison between the nations of Europe which allow initial policy implications to be drawn out. The framework, indicators and data can be explored in-depth on the interactive website which accompanies this report: www.nationalaccountsowellbeing.org

An invitation

Creating a system of National Accounts of Well-being is an ambitious and significant undertaking that will ultimately require extensive co-operation between governments, academics and citizens. This report is intended to kick-start discussion about the most useful form for such accounts and, as such, it represents the first word, not the final word. We actively encourage these initial proposals to be further explored, developed and prepared for implementation to allow for the long-term monitoring of European, and ultimately global, well-being.

It is highly likely – indeed we hope – that in time, new methodologies and understandings will emerge that will transform the proposals outlined here into a well-being accounting system that plays a central role in shaping the future of modern societies.

2. Why we need National Accounts of Well-being

For countries to operate a set of National Accounts of Well-being would be a significant departure from conventional practice. But the idea in fact represents a return to the original intent for modern national accounting systems as they were first conceived almost 75 years ago.

The welfare focus of the fledgling national accounting systems in the US and Europe was lost in the need to respond to wartime requirements and boost productivity. This change of emphasis then became fixed in the immediate aftermath of the Second World War and has been with us ever since.

Now we need to reclaim the true purpose of national accounts as initially conceived, taking advantage of the latest scientific advances which allow subjective well-being to be robustly quantified and measured.

Lost in translation

The term 'national accounting' is used worldwide to refer to the practice of describing economic activity within a country – its income, production, purchases, debt and so on. It is important, however, not to confuse the *form* that national accounts have taken to-date and the actual *purpose* for which they are intended. In fact, as originally conceived, national accounts were intended as a much more direct measure of welfare.

Following the Great Depression, work by economists in Germany, the UK and the US aimed to produce reliable estimates of national income in order to help decrease unemployment, compare the growth and productivity of countries with one another and to understand income distribution and its impact on welfare and consumption. Simon Kuznets, the original architect of national accounting in the US, gave particular emphasis to the goal of improving welfare in his approach. In a 1933 article describing the accounting system, he outlined a number of uses for the information revealed by the national accounts.⁸ These included comparing the growth and productivity of countries with one another, but also – and for Kuznets, more importantly – understanding income distribution and its impact on welfare and consumption within the US. When he reported to Congress on his work developing national accounting systems, he made very clear the limits of income-based indicators, stating: 'The welfare of a nation can, therefore, scarcely be inferred from a measurement of national income as defined above.'⁹

However, the context of the Second World War meant that the focus of national accounts shifted to increasing production to help the war effort. When the first international guidelines for national accounting were published in 1947, the focus on production stuck, and has been passed down in the *United Nations System of National Accounts* (UNSNA) which are used today. This focus is reflected by the enormous attention given to GDP as a headline indicator. Kuznets regarded the system that became established as a great disappointment. His intended purpose for national accounts had been to ensure that the 'consumption needs of *different* sectors of the population were being met' [emphasis added],¹⁰ a purpose not adequately answered by the new system.

Taking this historical view, it is clear that there is nothing inevitable about the focus on gross production that is embedded in our national accounting systems, and which has become the *de facto* marker of 'success'. Had Kuznets's original intentions for national accounting been adhered to, and the suggestions he made

for understanding and imputing non-market factors taken on board and developed, it is conceivable that the resulting system adopted around the world would have looked very different. Perhaps minimising income inequality would have been considered the central role of government, or maximising social and environmental value.

What gets measured, matters

Even once the original intention for national accounts is acknowledged, it is not a simple matter to change them to meet this aim. The current approach is so entrenched that it becomes ever harder to imagine an alternative way of doing things.

Economic historians have pointed out that once we begin measuring something in a certain way – especially something as complex as the economic transactions in a national economy – two things tend to happen. First, the measurements themselves begin to shape our conceptual understanding of the issue at hand. Second, the switching costs associated with changing or redesigning the measurement system become increasingly off-putting.¹¹ Economist Marilyn Waring argues that the UNSNA is a paradigmatic example of exactly these problems.¹² At the time the system was developed and formalised, production was the major policy focus. The upshot is that we tend to understand good economic performance *in terms of* increases in productivity, and hence gear our policy mechanisms towards this goal.

The pre-eminence of economic accounts in the way we conceptualise national progress has also affected our broader view of economic performance. As British economist Andrew Oswald has noted:

*'Economic performance is not intrinsically interesting. No-one is concerned in a genuine sense about the level of gross national product last year or about next year's exchange rate. People have no innate interest in the money supply, inflation, growth, inequality, unemployment... Economic things matter only in so far as they make people happier.'*¹³

That this needs to be pointed out at all suggests that at some stage during the establishment of the national accounting system, its original purpose as a measure of welfare became conflated in the general consciousness with its form. Economic accounting indicators are accorded a status as *if* they were of genuine intrinsic interest. As a result, the question as to whether the trends observed in economic indicators can be regarded as representing real improvements in people's lives has been largely ignored. A now established body of research suggests that the answer to this question is 'no'.

Missing out: what economic indicators don't tell us

GDP, the economic indicator *par excellence*, has been criticised for failing to take account of inequality, environmental costs, expenditure due to negative events and the value of unpaid work, and for ignoring direct measures of other aspects of welfare, such as health and education.¹⁴ But alongside these specific criticisms, there are reasons to think that economic indicators of any sort will always be unsatisfactory as measures of national progress, because their relationship to improvements in how people are faring is substantially weaker than has traditionally been assumed.

Economic indicators have been used as proxies for well-being under the assumptions of classical economics: that people have rational and stable preferences, and that their well-being is greatest when they have maximum opportunities to satisfy their wants and desires. Typically it has been assumed that maximising opportunity is a matter of maximising individual wealth. So if people are wealthier, the theory says, they will be happier.

But psychologists who have tested these classical assumptions against observations of real economic behaviour have found that people often make decisions and choices that are irrational, at least in the terms set out by economists.¹⁵ Economists themselves have also started to test the relationship between well-being and income, using subjective measures of well-being. Typically,

these are responses to large-scale surveys where people provide a self-reported assessment of their happiness and satisfaction with life, which research suggests provides reliable ratings of overall life satisfaction.^{16,17}

If classical economics is right, we would expect people to report greater satisfaction with their lives as they become wealthier. To a limited extent, the research findings bear this out. In a given country, at a given point of time, people with the highest incomes report greater satisfaction with their lives than those with the lowest incomes.¹⁸ Similarly, in cross-sectional measurements, countries with higher per capita GDPs tend to have higher mean levels of life satisfaction, though there are many exceptions.^{19,20,21} However, other findings suggest that attempting to increase well-being by increasing incomes across the board is unlikely to be a particularly effective means of increasing well-being.

First, historical evidence strongly suggests that it has not worked in the past. In a now-classic paper from 1974, the American economist Richard Easterlin used survey data to show that aggregate levels of subjective life satisfaction in the US had not risen in line with post-war economic growth.²² Juxtaposed with the findings described in the previous paragraph – this result was termed the ‘Easterlin paradox’: richer people at any given point in time may be happier, but as we all get richer, we don’t all get happier. Easterlin attributes this paradox to the importance of relative income to well-being. In summary, this means that once a certain absolute level of income is reached, gains in well-being are only due to having higher income *relative to other people*, not simply from having higher income *per se*. This paradox has perhaps been responsible for sustaining the illusion that economic growth is central to well-being. Policy-makers at any given point can see that their richer neighbours have higher quality of life, and may conclude from this that economic growth is the route to well-being. However, as developed countries have all grown in tandem, improvements in well-being have not been generated.

These findings have been widely replicated in the empirical literature,²³ but they have not gone unquestioned – for example, a 2008 research paper by economists Stevenson and Wolfers has cast doubt on whether the Easterlin paradox holds in general for all countries.²⁴ Easterlin argues – at www.nationalaccountsowellbeing.org – that this interpretation of the data is incorrect and that economic growth has not, in most countries, been associated with increasing life satisfaction. This debate will doubtless continue as more and better data are collected. The important thing to note, however, is that the magnitude of any increase in life satisfaction is small even in those countries where it may be statistically significant. Moreover, increases are not observed in all countries where they might be expected – no-one makes the case that life satisfaction has risen in the US, for instance, and indeed there is evidence that US women have actually become less satisfied since the 1970s.²⁵

Second, there is also now considerable evidence from psychology that well-being is much less strongly influenced by income than by other key aspects of people’s lives. A review of the extensive research in this area suggests that only a small proportion of the variation in subjective well-being is attributable to material and environmental circumstances – perhaps as little as 10 per cent. Around 50 per cent is due to relatively stable factors such as personality, genes, and environment during the early years. The remaining 40 per cent is linked to the ‘intentional activities’ in which people choose to engage: what they do and how they behave (both on their own and with others), their attitudes to the events in their lives, and the sorts of goals they are motivated to pursue.^{26,27,28,29} The implication is that well-being is much more weakly related to economic status than the focus on economic indicators adopted by modern nations leads us to assume.

It is worth reflecting on why these findings are so surprising. Modern society is organised around a particular model of how to pursue human well-being. Baldly stated, this model contends that increasing economic output leads straightforwardly to improved well-being: a higher standard of living and a better quality of life across society. Economies are organised explicitly around the need to increase GDP, with relatively little regard for how it is distributed; business models are predicated on maximising profits to shareholders; and people are led to believe that the more

disposable income they have – and thus the more they consume – the happier they will be. But economic indicators tell us nothing about whether people are in fact experiencing their lives as going well. There is a pressing need for a better, more direct way to measure society's performance against its overarching goal of improving well-being.

The benefits of National Accounts of Well-being

As we have seen, in many ways, the development of National Accounts of Well-being represents more a homecoming than a radical departure from the original intent of national accounting systems. Given the compelling evidence that people's well-being is much less strongly influenced by income than had once been assumed, national governments must now align what they measure with what is valued in human experience. Significantly, because of the recent strides taken in well-being research, we now have the means to achieve this. But this is not about measurement for measurement's sake. National Accounts of Well-being have the potential to provide more meaningful assessments of how nations are faring and to inform policy thinking and action in ways which have tangible impacts on people's day-to-day lives.

The key benefits which National Accounts of Well-being offer are:

- **A new way of assessing societal progress.** This is widely agreed to be necessary, timely and consistent with efforts taking place elsewhere to redefine our notions of national progress, success and what we value as a society.
- **A cross-cutting and more informative approach to the policy-making process.** By capturing population well-being in ways which cut across a range of areas of conventional policy-making, National Accounts of Well-being provide policy-makers with a better chance of reacting appropriately to the unprecedented 'triple crunch' of financial crisis, climate change and oil price shocks.³⁰ They can help with the difficult decisions that need to be taken about how the greatest gains can be brought about from finite resources. There are benefits at both ends of the policy cycle. A well-being dimension to the evaluation of policy proposals allows a shift away from narrow, efficiency-driven costs/benefits analysis of policy formulation to take account of a wider range of potential impacts on personal and social well-being. A well-being approach to evaluating policy outcomes offers the advantages of taking into account the 'real' experiential impact of new policies, laws, and directives at European and national levels, and of exploring variations between population subgroups.
- **Better engagement between national governments and the public.** By resonating with what people care about, National Accounts of Well-being provide opportunities for national governments to reconnect with their citizens and to address the democratic deficit now facing many European nations.³¹ The improved relationship can work in both directions. Governments will be able to carry out consultations with the public to elicit what they think should be measured within the accounts, with the aim of approaching a new consensus on the true meaning of 'progress'. In addition, governments will be able to communicate the evidence emerging from the national accounting data to enable people to make better informed choices, by reporting the relative importance of decisions in different aspects of people's lives on their overall well-being.

National Accounts of Well-being are direct measures of population well-being, not simply based on proxies. They therefore provide a way of describing people's experience of their lives which is consistent with evidence-based approaches to policy-making. In addition, because they are not limited to measures of life satisfaction, they provide a more textured approach to understanding what contributes to people's well-being and therefore a basis for further exploration and action.

We are not alone in recognising the need for, and calling for, this approach. There is a burgeoning international movement questioning the utility of economic indicators alone and exploring what it might mean to capture true measures of well-being, not simply financial wealth.

3. Gathering momentum

In January 2008, the French President Nicholas Sarkozy recruited Nobel-Prize-winning economists Joseph Stiglitz and Amartya Sen together with French economist Jean-Paul Fitoussi to form a special commission on the measurement of economic performance and social progress.

Outlining the scope of their work they state:

*'There is a huge distance between standard measures of important socio economic variables like growth, inflation, inequalities etc...and widespread perceptions...Our statistical apparatus, which may have served us well in a not too distant past, is in need of serious revisions.'*³²

The dismal state of Europe's 'widespread perceptions' is verified by the finding from the European Social Survey that in 2006 – which we would perhaps now regard as the peak of the economic boom years of the decade – 61 per cent of its inhabitants felt that for most people in their country life was getting worse. The situation was even starker in France itself, where more than 8 in 10 people (84 per cent) felt that life was getting worse for their fellow citizens.

The establishment of the French commission is not an isolated case of a government paying attention to the idea that current measures of national performance are seriously defective. There is a gathering momentum behind calls from academics, policy-makers and the public for governments to measure well-being as part of their national accounting systems.

In 2004 and 2005 there were calls from both **nef**, in its well-being manifesto,³³ and from the prominent UK economist Richard Layard, for governments to monitor the well-being of their citizens. Layard's highly influential book *Happiness* argued that the economic model of human nature used by policy-makers is 'far too limited' and that '[h]appiness should become the goal of policy, and the progress of national happiness should be measured and analysed as closely as the growth of GNP'.³⁴ In the US leading psychologists Professors Ed Diener and Martin Seligman argued that policy decisions 'should be more heavily influenced by issues relating to well-being' and that '[p]eriodic, systematic assessment of well-being will offer policy-makers a much stronger set of findings to use in policy-making decisions'.³⁵ Their call has been closely echoed by Nobel Prize winner Daniel Kahneman and colleagues³⁶ and is further developed in a forthcoming book *Well-being and Public Policy*, co-authored by Diener, which makes a forceful and detailed case for subjective indicators of well-being to aid the policy process.³⁷

There is also considerable support among the public for governments to use broader measures of progress. A UK poll found 81 per cent of people supported the idea that government's prime objective should be the 'greatest happiness' rather than the 'greatest wealth'.³⁸ Similarly, an international survey found that three-quarters of respondents believed that health, social and environmental statistics were as important as economic ones and should be used to measure national progress.³⁹ There is growing interest in alternative indicators such as the still-developing ecological footprint,⁴⁰ which has had so great an influence that the expression 'footprint' has entered popular usage. Measures deriving from well-being research have also become widely known through international studies such as the *World Values Survey*^{41,42,43} and **nef**'s own *Happy Planet Index*.⁴⁴ The crisis in the global finance system in 2008 has only added to the groundswell of opinion that the direction of society has been led off course by traditional indicators, and that the need for alternatives is now urgent.

Box 1. The growing importance of well-being in UK and international policy

The views of experts and the public have been mirrored by a growing number of policy and government initiatives which have given an ever-more prominent role to well-being. Although yet to devise systematic ways of capturing the well-being of citizens, the UK Government has been a leader in stimulating discourse about well-being and its measurement into the policy mainstream. This has now begun to be reflected in international action. This timeline demonstrates the ever-growing importance of well-being in UK and international policy initiatives during the current decade.

The momentum built up from this burgeoning cluster of initiatives is a powerful indicator that the time is now right for governments to take bold and far-reaching action to create the regular, systematic and detailed collection of measures of people's experiences which we are calling for. They will not be starting from a blank page, but will be building on the now considerable volume of policy experience, data and research findings, which have informed our proposals for National Accounts of Well-being.

2000

The UK Local Government Act gives local authorities the power to promote social, economic and environmental well-being in their areas.

2004

Academics in the UK and US call for governments to use well-being measures in policy-making, as did **nef's** *A well-being manifesto for a flourishing society*.

Bhutan hosts its first international conference on the development of a Gross National Happiness Measure.

2005

UK Sustainable Development Strategy, *Securing the Future*, commits the Government to exploring policy implications of wellbeing research.

2002

UK Prime Minister's Strategy Unit publishes paper *Life Satisfaction: the state of knowledge and implications for government*.

2006

UK local government White Paper *Strong and Prosperous Communities* defines a new place-shaping role for local government and its partners as 'the creative use of powers and influence to promote the general well-being of a community and its citizens'.⁴⁵

2007

The inter-governmental Organisation for Economic Co-operation and Development (OECD) hosts an international conference in Istanbul on *Measuring the Progress of Societies* where participants affirmed a 'commitment to measuring and fostering the progress of societies in all their dimensions' and urged the development of data to help form 'a shared view of societal well-being and its evolution over time'.⁴⁶ The OECD is taking forward this agenda in a Global Project (Box 6).

UK Government publishes provisional national indicators associated with well-being as part of its sustainable development indicator set, drawing together a cluster of existing measures and new survey data on subjective well-being.⁴⁷

The Statistical Office of the European Communities, Eurostat, commits research funding to review the merits and shortcomings of existing examples of indicators related to well-being, to examine the feasibility of selected indicators at EU level, and to

make recommendations for the most promising approaches for an indicator of well-being at an EU level.

A new duty on English schools to promote the well-being of their pupils comes into force.

UK Conservative Party's Quality of Life Policy Group calls for action across eight key policy areas, including well-being, stating '...we believe now is the time for the UK to agree upon a more reliable indicator of progress than GDP, and to use it as the basis for policy-making'.⁴⁸

The UK Office for National Statistics publishes a paper outlining its work on measuring societal well-being, floating the possibility that extensions to the current national accounts 'might eventually add up to a system of national wellbeing accounts'.⁴⁹

The Europe-wide *Beyond GDP* conference includes an opening address from the President of the European Commission, José Manuel Barroso, who calls for 'the

sort of breakthrough that we saw in the 1930s, a breakthrough that adapts GDP, or complements it with indicators that are better suited to our needs today, and the challenges we face today'.⁵⁰

Following the 2007 spending review, a number of UK government departments identify well-being as an explicit objective in their Public Service Agreement (PSA) targets for 2008–2011. For example, the Department for Work and Pensions are responsible for a PSA target to *Tackle poverty and promote greater independence and well-being in later life*; the DCSF co-ordinates work on a PSA target *Improve the health and well-being of children and young people* and measures its progress against five key indicators including one on emotional health and well-being; whilst the Department of Health is lead department for a PSA target to *Promote better health and well-being for all*.

2008

The launch of the Stiglitz Commission prompts the submission of an Early Day Motion to the UK House of Commons by MP Jo Swinson urging 'the Government to both endorse and participate in the French study, with the aim of improving the well-being, not simply the wealth, of all people in the UK'.⁵¹

The UK Government's Foresight Review on Mental Capital and Well-being releases findings from two-year investigation, concluding that government policies 'need to nurture the mental capital and wellbeing in the wider population, so that everyone can flourish in their lives'. The report called for the 'radical step' of the development of an 'over-arching mental capital and wellbeing measure akin to the Communities and Local Government's (CLG) Index of Multiple Deprivation' to be explored.⁵²

HM Treasury in the UK publishes a working paper on *Developments in the Economics of Well-being* which suggests the role of the Government is to achieve an appropriate balance between policies that promote well-being and policies that maintain economic incentives to support innovation and growth. Whilst raising concerns about intervening explicitly to influence well-being, in relation to measurement it concludes: 'Well-being – both subjective and objective – is an important issue. It provides a new framework with which to measure progress and analyse policy, providing new evidence for policy-makers to assess how material welfare affects well-being'.⁵³

4. National Accounts of Well-being: a framework

To achieve a shift towards more meaningful measures of progress and indicators for policy, it is important that recent debates around well-being now move from ideas to action. But as with any formal accounting task, this requires answers to core questions about how the concept can be defined and measured.

What aspects of well-being should any new national accounts comprise? How might these aspects be put into practice when well-being measures are developed? Should the different component data be brought together into a single index, and if so, how?

We present a direction of travel reflecting our recent thinking and work on these and other questions. It is a framework for how National Accounts of Well-being *could* be constructed in practice based on the data possibilities afforded to us by the recent well-being module included in the European Social Survey. The working model presented here, upon which the subsequent presentation of findings is based, is a serious attempt to sketch out what National Accounts of Well-being might look like. However, we do not claim it is the approach which should ultimately be taken forward in any final set of national well-being accounts and we actively encourage debate and discussion of both its advantages and shortcomings.

Which aspects of well-being to include?

Well-being is most usefully thought of as the dynamic process that gives people a sense of how their lives are going, through the interaction between their circumstances, activities and psychological resources or 'mental capital'.

Another useful definition, of 'mental capital and well-being', is provided by the recent UK Government Foresight review, which drew on key thinking commissioned from **nef** regarding the conceptualisation and measurement of well-being.⁵⁴ It explained mental capital as 'a person's cognitive and emotional resources' and well-being as 'a dynamic state, in which the individual is able to develop their potential, work productively and creatively, build strong and positive relationships with others, and contribute to their community'.⁵⁵

Given the character of well-being which these definitions describe, the challenge is for National Accounts of Well-being to capture this multiplicity and dynamism in the indicators which they include.

More than life satisfaction

Understanding subjective well-being as dynamic interaction between different factors, has important implications for the way in which it is measured. As we saw earlier, economists and others have come a long way in their understanding of people's experiences of their lives using a single-item life satisfaction question. However, few researchers in the field would now claim that measuring well-being with a single question is sufficient.

Above and beyond the multidimensional nature of well-being, there are a number of other considerations that suggest life satisfaction on its own is not an adequate measure of the concept. It is well-established in the field of psychometrics (the study of how to measure psychological states), that only using a single question to measure any state invites a high risk of errors. For example, no one would claim to be able to measure intelligence with a single question. As a result, psychometricians typically create *scales* or batteries which include several questions that all aim to measure the same concept. Combined, these are far more reliable than any single question on its own.

Other problems are specific to the question which asks people to report their satisfaction with life. Recent evidence suggests that in answering life satisfaction questions, people tend to focus on the easily definable parts of what drives their sense of whether their lives are going well, while leaving out equally important aspects on which it is harder to place a value.⁵⁶ Others have suggested that response biases are more likely to play a role when questions are general (such as the life satisfaction question), rather than specific.⁵⁷ A further disadvantage of simply using life satisfaction to monitor well-being derives from the fairly static trends which have been observed in many developed nations over recent decades. This lack of sensitivity to policy decisions makes it a very blunt tool on which to base government decisions, and suggests further advantages to using a broader set of well-being indicators, of which the constituent parts have clear links to defined policy areas. Each of these reasons for moving towards a broader set of well-being measures is explored in more detail in Appendix 1.

Personal and social dimensions of well-being

A focus on the quality of people's experiences of their lives might suggest that the predominant concern of National Accounts of Well-being is with people as individuals, aggregating different people's reports of how they are feeling within themselves and experiencing life from their personal standpoint. While this is absolutely core to measuring well-being, simply focusing on these sorts of measures risks sidelining what research has found to be a crucial factor in affecting the quality of people's experience of life: the strength of their relationships with others. There is plentiful evidence that 'feeling close to, and valued by, other people is a fundamental human need and one that contributes to functioning well in the world'.⁵⁸ Therefore, it is important that a national accounting system measures the social dimension of well-being in addition to the personal dimensions. Such measures of social well-being are still based on individuals' subjective reports of their experiences and perceptions. But collecting these measures into an overall indicator of social well-being ensures that appropriate attention is paid to the essential issue of how well people feel they relate to others.

Feelings, functioning and psychological resources

The focus on happiness and life satisfaction measures in much well-being research has often led to an identification of well-being purely with experiencing good feelings and making positive judgements about how life is going. There is a growing consensus in the field, however, about the importance of paying attention to whether people are 'doing well', as well as to what extent they are feeling good. This consensus was a key element in informing the design of the European Social Survey well-being module, which aimed to 'incorporate two distinct theoretical approaches to well-being: the hedonic approach, which is concerned with pleasure, enjoyment and satisfaction; and the eudaimonic approach, which is concerned with functioning and the realisation of our potential,'⁵⁹ a distinction which can be summarised as that between feeling (having, being) and functioning (doing). The psychological resources element is also gaining growing recognition as a key component of well-being, as demonstrated by the Foresight review definition of 'mental capital and well-being' mentioned earlier. Any comprehensive system of National Accounts of Well-being, therefore, needs to include measures of each of these different components.

A working model of National Accounts of Well-being

The exercise of constructing an example framework for National Accounts of Well-being was made possible because of the recent collection of well-being data across more than 20 European countries, at a far more detailed level than anything previously attempted. In 2005, Professor Felicia Huppert of the University of Cambridge, asked **nef**, together with four other research centres,⁶⁰ to join an ultimately successful application bid to the European Social Survey to develop a 50-item questionnaire module to assess 'personal and social well-being' across Europe.⁶¹

As we have seen, a key aim in the design of the module was to measure both the feelings and functionings aspects of well-being, as well as psychological resources. A further aim was 'to go beyond individualistic aspects of well-being, by

incorporating measures of social or interpersonal well-being'.⁶² This meant that the survey covered all the key aspects of well-being outlined earlier.

The survey fieldwork carried out across Europe resulted in a cross-national dataset, released in autumn 2007, containing detailed measures of the individual experiences of over 40,000 people. These data have been used to construct the national accounts framework reported here, for 22 European countries participating in the survey, covering both EU and non-EU members (see Appendix 2 for details of countries included).

Forty-one of the European Social Survey questions have been combined in our framework to produce two main indicator sets, based on the top-line personal and social well-being indicators which are comprised hierarchically of component and subcomponent indicators. The importance of examining both personal and social well-being is reflected in the approach of having two top-line indicators, one for each of these realms. Summarising experienced well-being in this dual-aspect approach makes clear the many different dimensions of well-being, which require a comprehensive, nuanced system of measurement to be properly captured. As an example of a well-being measure within a particular life domain, a satellite indicator of well-being at work was constructed, from six further survey questions, in addition to the main indicator set. The hierarchical structure of the indicators is described in Box 2.

Creating the composite indicators

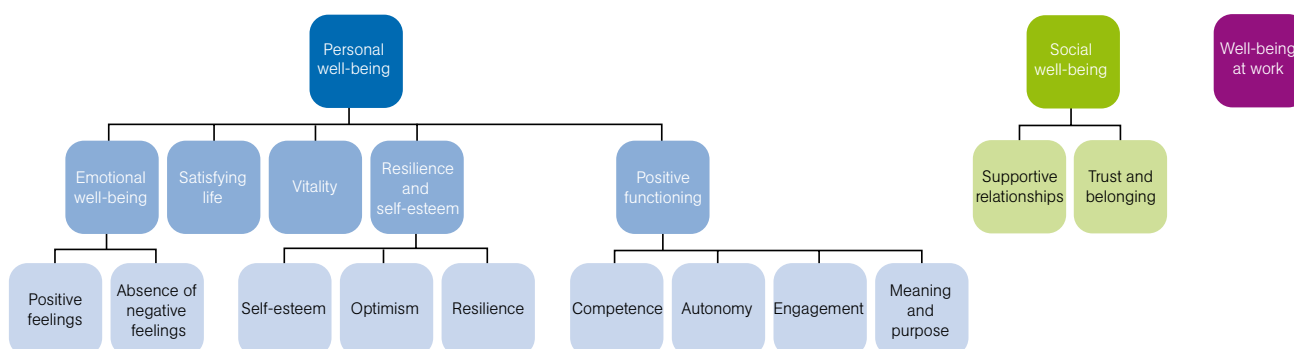
The subcomponent and component indicators within the framework are a set of composites which each combine responses to several questions (apart from two single item subcomponents). Subcomponents and components are then aggregated to create overall personal and social well-being scores. The groupings in which measures are combined derive from an iterative process based on analysis of well-being theory, the substantive content of the question wordings, and the statistical structure of the data. After deciding on the groupings, indicators were calculated in a three-stage process. First, scores for the original survey questions were standardised to allow meaningful comparison. Next, questions were aggregated to produce subcomponent and component scores. Last, the results were transformed on to 0–10 scales, calibrated so that 5 always represents the average score for Europe (Appendix 2).

The resulting indicator scores allow for comparison on a single indicator between countries and demographic groups and would allow comparison over time should more data be collected. They also allow meaningful comparison between performance on different components and subcomponents. What they do not do is allow the comparison of performance with absolute targets or thresholds. Whilst 10 is the theoretical maximum score for any of the national accounts indicators, there is no definition of how high you have to score to have high well-being, other than the fact that scoring above 5 means scoring above the European average.

While their design means that the scores presented here are intrinsically relative to the average well-being levels measured in 2006/2007 in the group of 22 European countries included, this sort of relativity is in effect a feature of any national accounting system. In the same way, knowing the level of a country's GDP in a particular quarter has little meaning, without knowing how its GDP has changed over the preceding period and how it compares to the GDP of other countries. The indicators therefore gain meaning when they are used to compare the experiences of groups located in different social and geographical space, and over different times.

Box 2. Structure of the example national accounts framework

Figure 1 – Indicator structure within the example national accounts framework.



Personal well-being is made up of five main components, some of which are broken down further into subcomponents. These are:

- **Emotional well-being.** The overall balance between the frequency of experiencing positive and negative emotions, with higher scores showing that positive emotions are felt more often than negative ones. This is comprised of the subcomponents:
 - **Positive feelings** – How often positive emotions are felt.
 - **Absence of negative feelings** – The frequency with which negative emotions are felt, with higher scores representing less frequent negative emotions.
- **Satisfying life.** Having positive evaluation of your life overall, representing the results of four questions about satisfaction and life evaluations.
- **Vitality.** Having energy, feeling well-rested and healthy, and being physically active.
- **Resilience and self-esteem.** A measure of individuals' psychological resources. It comprises the subcomponents:
 - **Self-esteem** – Feeling good about yourself.
 - **Optimism** – Feeling optimistic about your future.
 - **Resilience** – Being able to deal with life's difficulties.
- **Positive functioning.** This can be summed up as 'doing well'. It includes four subcomponents:
 - **Autonomy** – Feeling free to do what you want and having the time to do it.
 - **Competence** – Feeling accomplishment from what you do and being able to make use of your abilities.
 - **Engagement** – Feeling absorbed in what you are doing and that you have opportunities to learn.
 - **Meaning and purpose** – Feeling that what you do in life is valuable, worthwhile and valued by others.

Social well-being is made up of two main components:

- **Supportive relationships.** The extent and quality of interactions in close relationships with family, friends and others who provide support.
- **Trust and belonging.** Trusting other people, being treated fairly and respectfully by them, and feeling a sense of belonging with and support from people where you live.

In addition to these indicators, as an example of a well-being indicator within a specific life domain, a satellite indicator of **well-being at work** has also been created. This measures job satisfaction, satisfaction with work-life balance, the emotional experience of work, and assessment of work conditions.

A full list of the questions included in each indicator, subcomponent and component is included in Appendix 3.

5. Findings 1: A new view of Europe

Viewed through the lens of **nef**'s National Accounts of Well-being, the picture of the relative progress of European countries shows some surprising results. Thus, whilst Denmark retains its oft-cited position as having the highest levels of well-being in Europe, other rankings of countries on personal and social well-being deviate from what might be expected.

Sweden, for example, so often singled out to be praised for its policy success is within the top five nations on social well-being but does not feature as one of the highest performers regarding the personal well-being of its citizens. In fact, except for Denmark and Ukraine which display unusual stability in coming at the very top and very bottom of the rankings on personal well-being and social well-being respectively, all but two of the other twenty countries change position. Spain, for example, which is middling on personal well-being, has the third-highest levels of social well-being in Europe. The maps at the back of this report show how levels personal and social well-being in Europe are distributed geographically.

Table 1. Headline well-being indices: ranks and scores of countries.

	<i>Personal</i>		<i>Social</i>		<i>Difference in social rank from personal rank⁶³</i>
	Rank	Score	Rank	Score	
Denmark	1	5.96	1	5.89	–
Switzerland	2	5.80	4	5.52	↓
Austria	3	5.61	10	5.13	↓↓
Norway	4	5.61	2	5.77	↑
Finland	5	5.52	9	5.26	↓↓
Ireland	6	5.50	6	5.37	–
Sweden	7	5.45	5	5.44	↑
Netherlands	8	5.33	8	5.30	–
Cyprus	9	5.30	12	4.93	↓
Belgium	10	5.16	13	4.92	↓
Germany	11	5.14	17	4.88	↓↓
Spain	12	5.12	3	5.58	↑↑↑
UK	13	5.07	15	4.90	↓
Slovenia	14	5.04	20	4.78	↓↓
France	15	4.97	19	4.80	↓↓
Poland	16	4.79	18	4.83	↓
Estonia	17	4.71	16	4.90	↑
Portugal	18	4.52	7	5.31	↑↑↑
Slovakia	19	4.50	21	4.64	↓
Hungary	20	4.41	11	5.10	↑↑↑
Bulgaria	21	4.30	14	4.91	↑↑
Ukraine	22	4.17	22	4.61	–

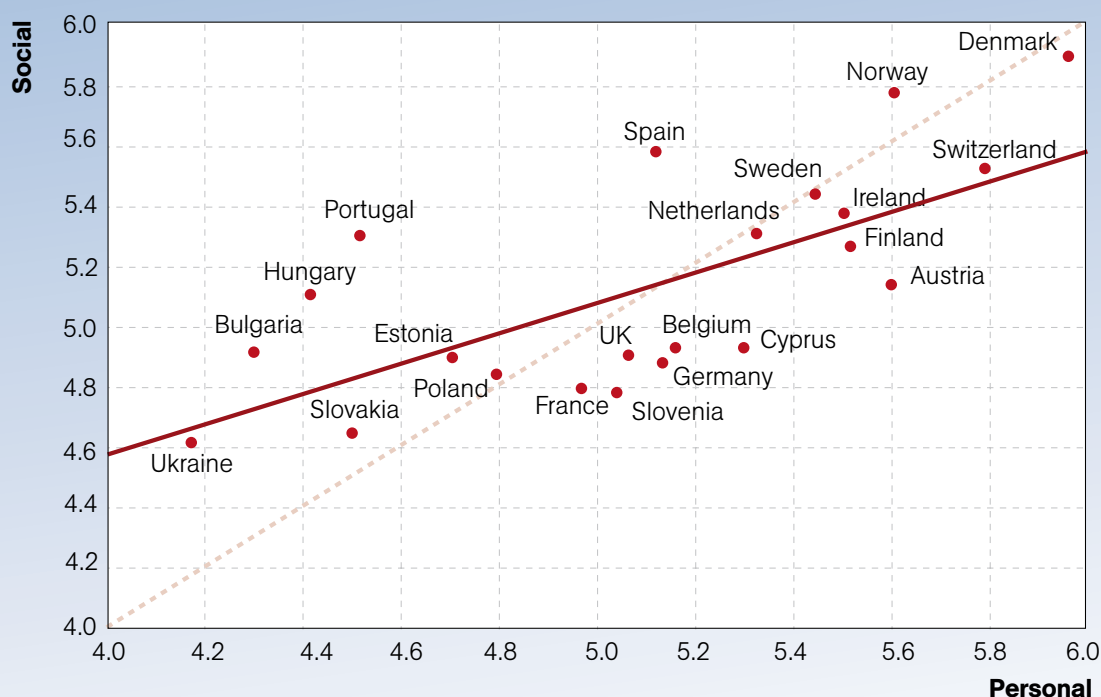
Box 3. The National Accounts of Well-being website



The website accompanying this report at www.nationalaccountsowellbeing.org allows the National Accounts of Well-being data to be interactively explored. Headline, component and subcomponent indicators can be compared across Europe and within specific countries, and filtered by demographic group. The relations between different indicators and other data, such as life expectancy or unemployment rates, can be examined. Users are able to post comments on graphs that they and others create during their analysis, so as to enable continuing dialogue about the emerging findings. People visiting the website will also be able to answer the set of European Social Survey questions from which the national accounts indicators have been constructed, and see how their personal results compare to those for their country and for Europe as a whole.

By allowing the components of well-being to be explored in detail, these results enable a much deeper understanding of the constituents of, and factors related to, well-being at population level. Although repeated time-series measures will be required to make robust statements about causality, our results demonstrate how national accounting can help to identify a number of areas where large-scale policy action, at the very least, seems likely to affect different components of population well-being, including the different dimensions of personal well-being and social well-being. It is highly plausible, for example, that mental health initiatives could affect the personal well-being components of *emotional well-being* and *resilience and self-esteem*, that employment policy could affect personal well-being in terms of *positive functioning*, and that community-focused policy might act on the social well-being component, *trust and belonging*. These results raise a number of such questions for further investigation, which we hope the broader research and policy community will take forward. In addition, as Box 3 explains, our National Accounts of Well-being website provides a user-friendly mechanism for in-depth, interactive exploration of the indicators and data.

Figure 2. Personal and social well-being in European countries.



Solid line shows best fit line for personal and social well-being correlation ($r=0.55$). Dashed line indicates notional position of countries scoring equally on personal and social well-being

Personal and social well-being

The graph of countries' personal well-being scores plotted against their social scores (Figure 2) makes clear the moderate level of the correlation between the two indicators. There is some relationship, with Denmark, Norway and Switzerland clearly performing very well on both indicators, and the Central and Eastern European countries clustering towards the bottom of each. But it is striking that all the Central and Eastern European countries except Slovenia have higher scores for social than for personal well-being (that is, they appear to the left of the dashed line representing equal scores on both). Furthermore, both the Iberian nations Portugal and Spain have much greater average levels of social well-being than personal well-being. A key task for policy-makers highlighted by this finding is therefore one of identifying the structures in these countries which succeed in promoting the elements of social well-being – *supportive relationships* and *trust and belonging* – beyond the levels which would be expected purely from examining personal well-being.

Conversely, some countries do considerably better at promoting the personal rather than the social well-being of their citizens. Austria, for example, comes third when countries are listed according to personal well-being, but only tenth in the social well-being rankings (Table 1). Cyprus also stands out as a country whose personal well-being score is considerably higher than its score for social well-being. Do these countries have something in common which produces this result? Further exploration of European Social Survey and other data may help to answer this and similar questions.

The national accounts data structure offers a rich variety of ways in which this further exploration can be carried out. These include: looking for patterns in well-being indicators in European regions and demographic groups; digging further within the structure of subcomponents that comprise the headline indicators; examining the different pictures of well-being in different countries and whether they can be linked to structural features of their economic and political systems; and investigating links between other aspects of individuals' lives and their scores on well-being indicators. The following sections provide some examples of the findings which can be produced from these sorts of analyses.

Box 4. A combined well-being index

How is the economy doing? If the answer to this question were a set of 50 figures going up and down, then only a few economists would have the time and patience to pay attention. That's partly why GDP as a headline has proved so popular – it reduces the complexities of the economy to a single figure which can be compared over time and between countries.

The same applies to well-being. Presenting separate data on 40 or so different questions would make it hard to see the patterns for the numbers and has the lack of reliability associated with using a single measure to capture any particular aspect of well-being (Appendix 1). But we would not want to suggest that well-being really is so simple as to be understood in a single aggregate figure. We have therefore opted for a middle approach, reporting two headline figures for personal and social well-being. This allows decision-makers and specialists to delve deeper into the structure of the national accounts, while those wanting a quick glance can take away just two figures for each country, region or population group.

But perhaps presenting even two figures is too complicated, and leaves the accounts open to different interpretations. Will people focus on one set of figures at the expense of the other? Will they just average the two sets? While our view is that the multifaceted nature of well-being ought to be reflected in the indicators which summarise it, these sorts of concerns mean that it is valid to explore whether a single composite well-being index would in fact be useful, and if so, to discuss how it should be created.

Table 2 presents the country rankings according to a range of different single composite indicator scores, which give different weightings to the personal and social elements of well-being (full combined indicator scores are shown in Appendix 4). It shows that while there is a fairly high degree of stability across the different rankings, many countries move by at least one rank between each composite, and Portugal, for example, moves by more because its scores for personal and social well-being are substantially different. Where a single composite indicator is required, we recommend using that from the 2:1 weighting of personal to social well-being, because it appropriately reflects the greater complexity of the constructs which constitute personal well-being. However, we encourage further interactive exploration of the effects of different personal and social weightings at www.nationalaccountsofwellbeing.org

Table 2. Country rankings according to alternative composite indicators.

	Personal	Social		Combined index 2:1	1:1	Lowest
1	Denmark	Denmark	KEY: <ul style="list-style-type: none"> ○ Personal: just the personal well-being scores (for comparison) ○ Social: just the social well-being scores (for comparison) ○ Combined index 2:1: personal well-being scores weighted 2:1 over social well-being scores ○ 1:1: personal and social well-being scores weighted equally ○ Lowest: score equal to the lowest of the separate social and personal well-being scores <p>Countries are colour-coded by European region (see Figs 3 and 4 overleaf).</p>	Denmark	Denmark	Denmark
2	Switzerland	Norway		Switzerland	Norway	Norway
3	Austria	Spain		Norway	Switzerland	Switzerland
4	Norway	Switzerland		Ireland	Sweden	Sweden
5	Finland	Sweden		Austria	Ireland	Ireland
6	Ireland	Ireland		Sweden	Finland	Netherlands
7	Sweden	Portugal		Finland	Austria	Finland
8	Netherlands	Netherlands		Netherlands	Spain	Austria
9	Cyprus	Finland		Spain	Netherlands	Spain
10	Belgium	Austria		Cyprus	Cyprus	Cyprus
11	Germany	Hungary		Belgium	Belgium	Belgium
12	Spain	Cyprus		Germany	Germany	UK
13	UK	Belgium		UK	UK	Germany
14	Slovenia	Bulgaria		Slovenia	Slovenia	France
15	France	UK		France	Portugal	Poland
16	Poland	Estonia		Poland	France	Slovenia
17	Estonia	Germany		Estonia	Poland	Estonia
18	Portugal	Poland		Portugal	Estonia	Portugal
19	Slovakia	France		Hungary	Hungary	Slovakia
20	Hungary	Slovenia		Slovakia	Bulgaria	Hungary
21	Bulgaria	Slovakia		Bulgaria	Slovakia	Bulgaria
22	Ukraine	Ukraine		Ukraine	Ukraine	Ukraine

Figure 3. Personal and social well-being by European region.

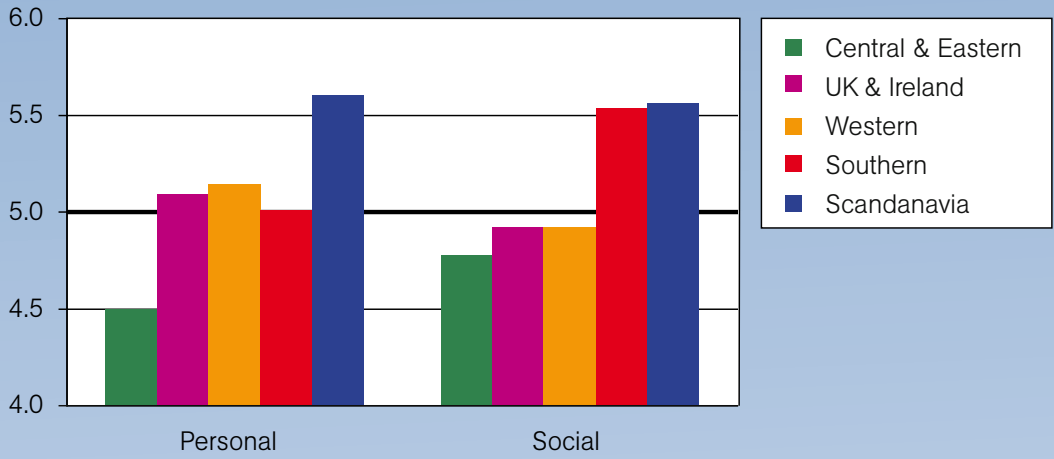
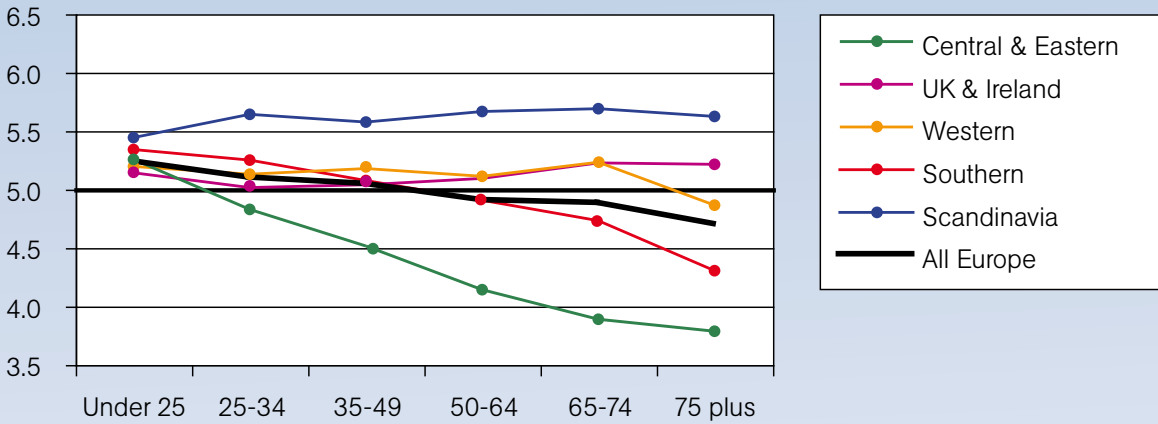
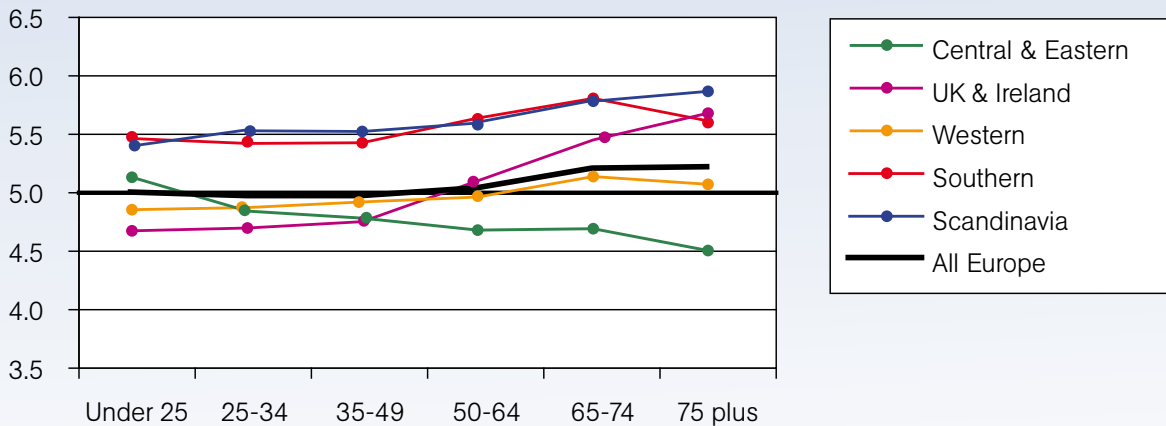


Figure 4. Personal and social well-being by age group, for regions of Europe.

Personal well-being



Social well-being



European well-being by region and demographics

Grouping countries by region reveals an interesting geography of European well-being.⁶⁴ The UK and Ireland, Western Europe and Southern Europe regions are similar in their overall levels of personal well-being, which are considerably higher than those in Central and Eastern Europe and lower than those in Scandinavia. This geography shifts, however, for social well-being, where the similar levels in both Scandinavia and Southern Europe, are far above those in Western Europe, the UK and Ireland and Central and Eastern Europe.

When demographics are added to the analysis, it becomes even clearer to see differences in how life is experienced by different groups in Europe. For example, while personal well-being declines with age across much of Europe, there is a much stronger decline in Central and Eastern Europe. The oldest age group in this region has particularly low well-being, in contrast to the well-being of its youngest group which is similar to that in all the other regions. While there is also a decline of personal well-being with age in Southern Europe, this is not the case in other regions; in the UK and Ireland there is a slight U-shape, with personal well-being lowest for those in the middle age groups. The picture of social well-being with age looks somewhat different, with a slight increase with age across Europe as a whole, and a particularly marked increase in the UK and Ireland. In fact, for both the personal and social well-being of those under 25, the UK and Ireland have the lowest average score for any region, which echoes the recent findings from UNICEF which placed the UK bottom out of 21 developed countries on both objective and subjective measures of child well-being.⁶⁵

The implication of these findings is that in order to improve levels of well-being within a country, it is necessary to pay close attention to the design of policies aimed at different age groups. At the very least, it demonstrates the need to separately measure the well-being of distinct age groups, to understand more fully how it might be affected in varying ways by policy interventions. It is also worth noting that while the European Social Survey data only allow the well-being of those aged 15 and over⁶⁶ to be captured, efforts to develop more systematic measures of children's subjective well-being are also advocated.

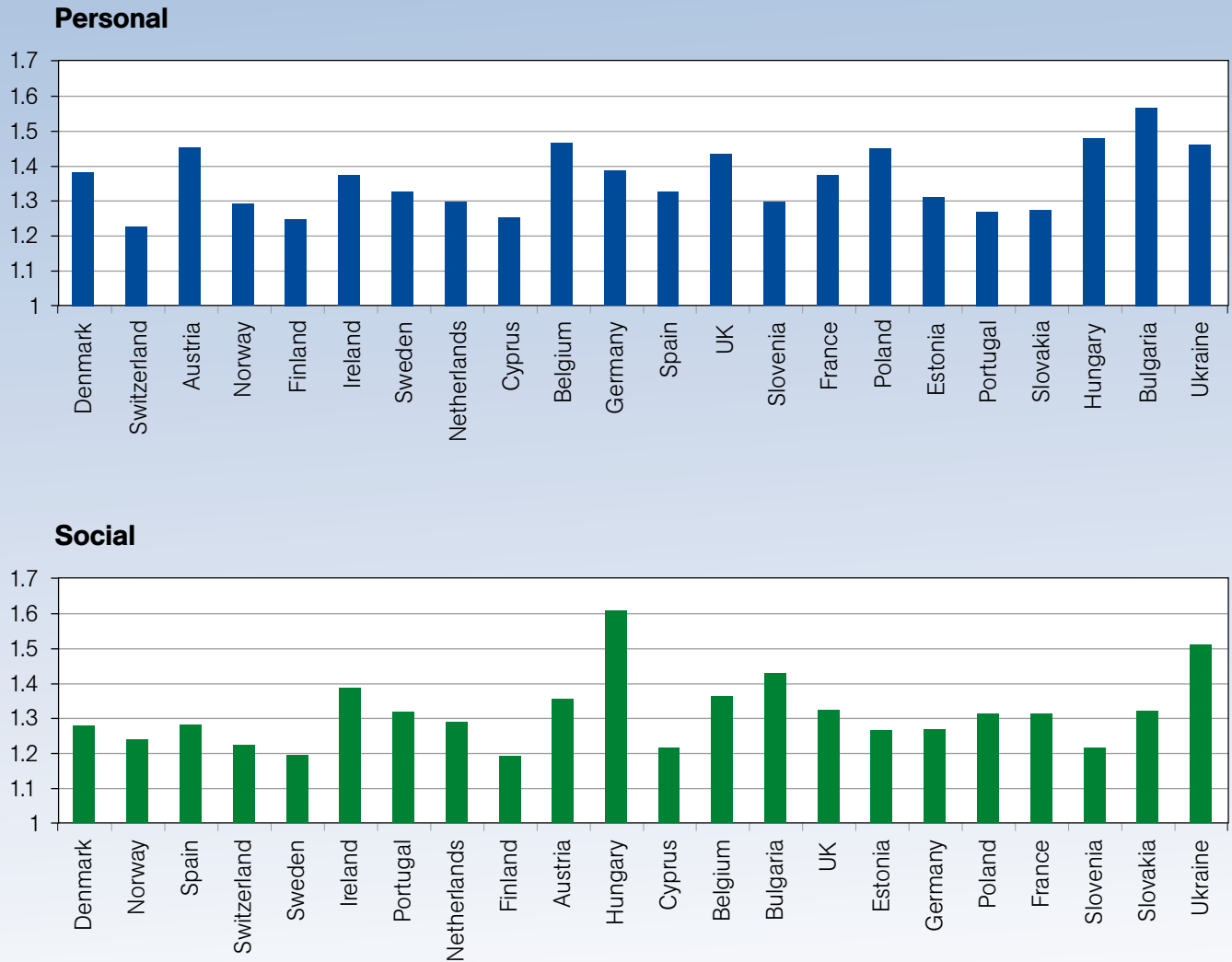
The distribution of well-being

While the headline indicators summarise levels of the different components of well-being in European countries, they do not reveal how levels of well-being are distributed within a country. This is, however, an important part of the overall picture of national well-being, as it indicates whether there are significant inequalities in the quality of people's subjective life experiences.

Figure 5 shows the degree of dispersion of personal and social well-being, based on a standard deviation equivalent measure, for countries ordered according to their overall personal and social well-being scores.⁶⁷ No clear link is apparent from these graphs between the overall level of personal or social well-being in a country and the degree to which it is dispersed in the population. For example, Austria has the third-highest average level of personal well-being as well as the fifth-highest personal well-being dispersion, whereas Switzerland has the second-highest average level of personal well-being but the lowest dispersion. So while they have similar average levels of personal well-being, in Switzerland there is relatively little variation in those levels between individuals, whereas in Austria there are many more individuals at both the high and low ends of the scale.

Many of the highest levels of dispersion are in Central and Eastern European countries. Hungary, Bulgaria and Ukraine have particularly high levels of dispersion on both indicators. Given the huge social, political and economic changes experienced in these countries since the collapse of the Soviet Union, these data suggest that their rapid economic development in recent years may have created particular disparities in the lives of their citizens, with some people flourishing while others are struggling. This is not a universal picture throughout Central and Eastern Europe, with Slovenia and Slovakia standing out as exceptions. Furthermore, inequalities in how life is experienced within a country are not confined to Central and Eastern Europe: it is noteworthy that Austria,

Figure 5. Levels of dispersion of personal and social well-being across Europe.



Belgium and the UK have similar levels of dispersion to the highest levels seen in Central and Eastern European countries.

The issue of well-being inequality is an important one for societies to consider. While inequalities in income are often justified on grounds such as 'a rising tide lifts all boats' – the idea that the general creation of wealth in the economy will eventually result in benefits to all its participants – it is not clear that similar arguments can be applied to inequalities in how people experience their lives. Reducing inequalities in well-being may therefore be considered an important aim for nations to adopt, using National Accounts of Well-being to track progress towards this goal.

6. Findings 2: The components of national well-being

The full value of a national well-being accounting framework starts to become clear when scores for the components which comprise the headline indicators are examined. By looking at how the different components vary both within and across countries, it is possible to start gaining insights into the character of well-being in different countries.

This yields a far more nuanced picture than can be gleaned from the headline indicator scores alone. This section therefore examines the variation in well-being component scores across countries, and looks at what can be discovered about the well-being of nations from comparing scores on different components.

Component variation

Figure 6 (over page) shows scores for each component of well-being plotted for countries ranked in order of their score on the relevant main indicator of personal or social well-being. This reveals some interesting differences in the variation of the scores of different components. For example, scores for both the *satisfying life* and *vitality* components on the whole mirror the overall personal well-being rank order, although top-ranking Denmark is not one of the highest scoring countries on *vitality*. They show a considerable contrast in the ranges of their highest and lowest scores, however, with *satisfying life* showing a much larger range than other components. This seems to provide some justification for the way in which satisfaction-based indicators have often been treated as outcome measures in well-being research, in that they seem both to summarise people's overall sense of their personal well-being and to distinguish between those at different ends of the distribution. Unlike with single-measure life satisfaction data however, the inclusion of multiple components allows the composition of overall well-being in different countries to be explored much further. These sorts of findings can be of great value in helping countries to identify the components specific to them in which there is scope to make the biggest improvements, and thus where national governments might focus their resources and policy efforts.

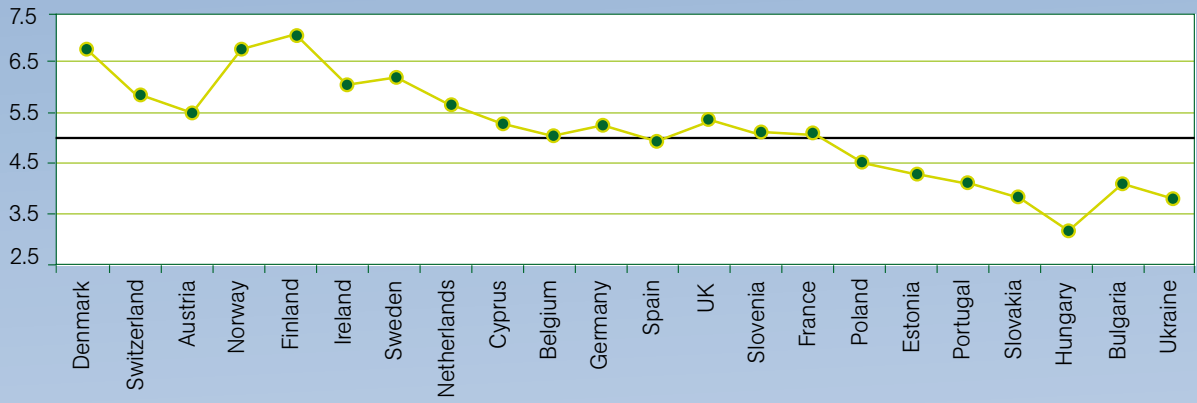
The *emotional well-being* component is shown split into its two aspects of *positive feelings* and *absence of negative feelings* in order to demonstrate the different behaviour of each. It is particularly striking that the scores for *absence of negative feelings* differ markedly from the overall personal well-being rank order of countries, with a number of countries appearing to be out of step on this component from their overall score. Three of the Scandinavian countries (Denmark, Norway and Finland) have particularly high scores on this measure, with Hungary's score notably lower than for any other country. This reflects in part that the range of scores for *emotional well-being – absence of negative feelings* is bigger than for any other component, suggesting that experiences of this element of well-being are particularly different for people in different countries. By contrast, while Germany has a much lower score for *positive feelings* than other countries which score similarly on personal well-being overall, *positive feelings* scores are generally in line with the personal well-being rank order. Levels of the different components of well-being within countries therefore have some degree of independence from each other, suggesting that they are produced to some extent by different factors or mechanisms of national life.

Further differences are revealed from comparing scores of different components side-by-side. For example, the two components of social well-being, *supportive relationships* and *trust and belonging*, to some extent can be seen as representing people's experiences of their 'thick' and 'thin' relationships: 'thick' relationships

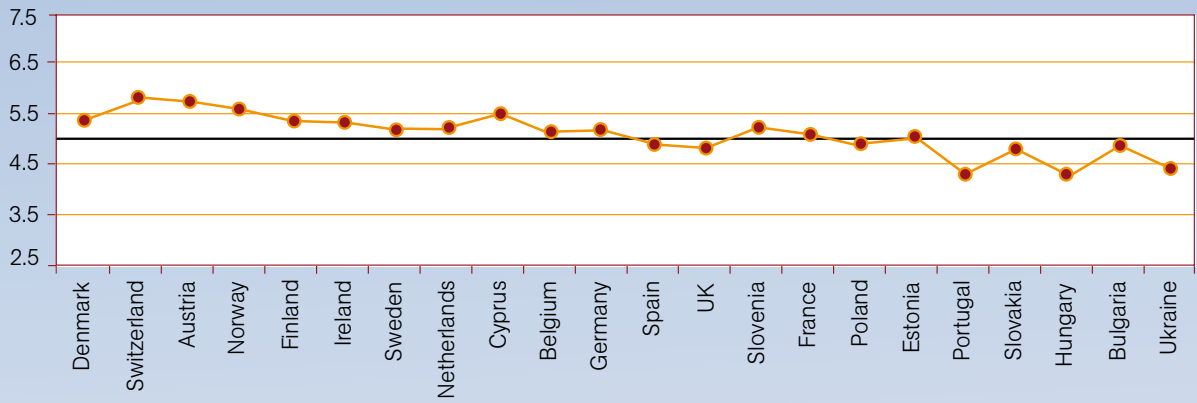
Figure 6. Country scores on components of well-being.



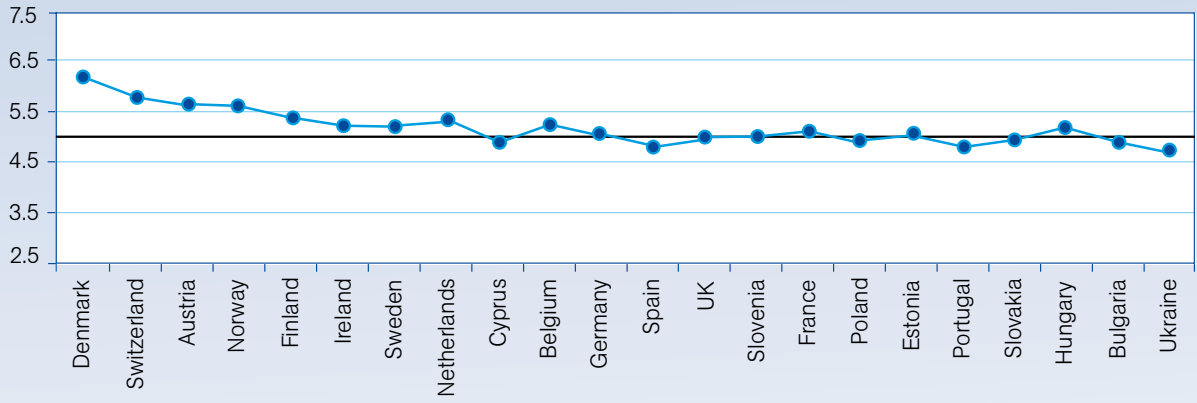
Emotional well-being - negative feelings



Vitality



Positive functioning



Trust and belonging

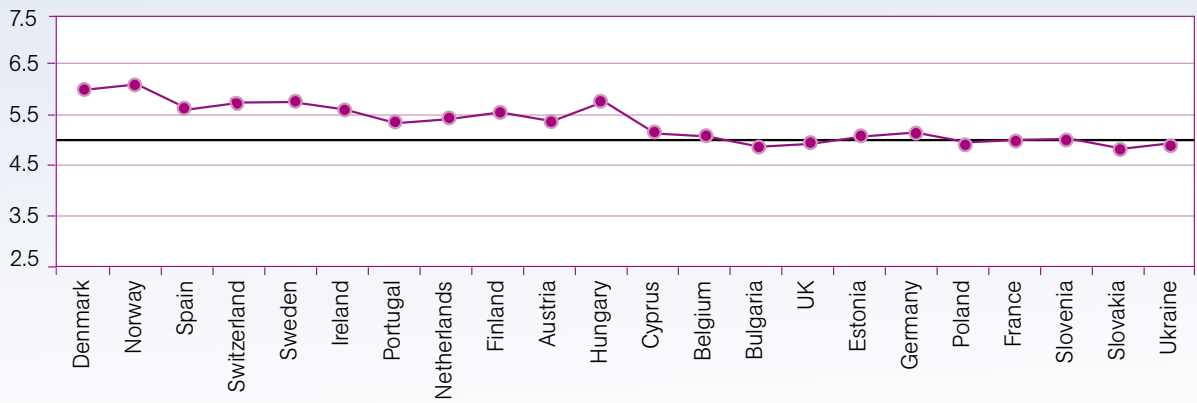
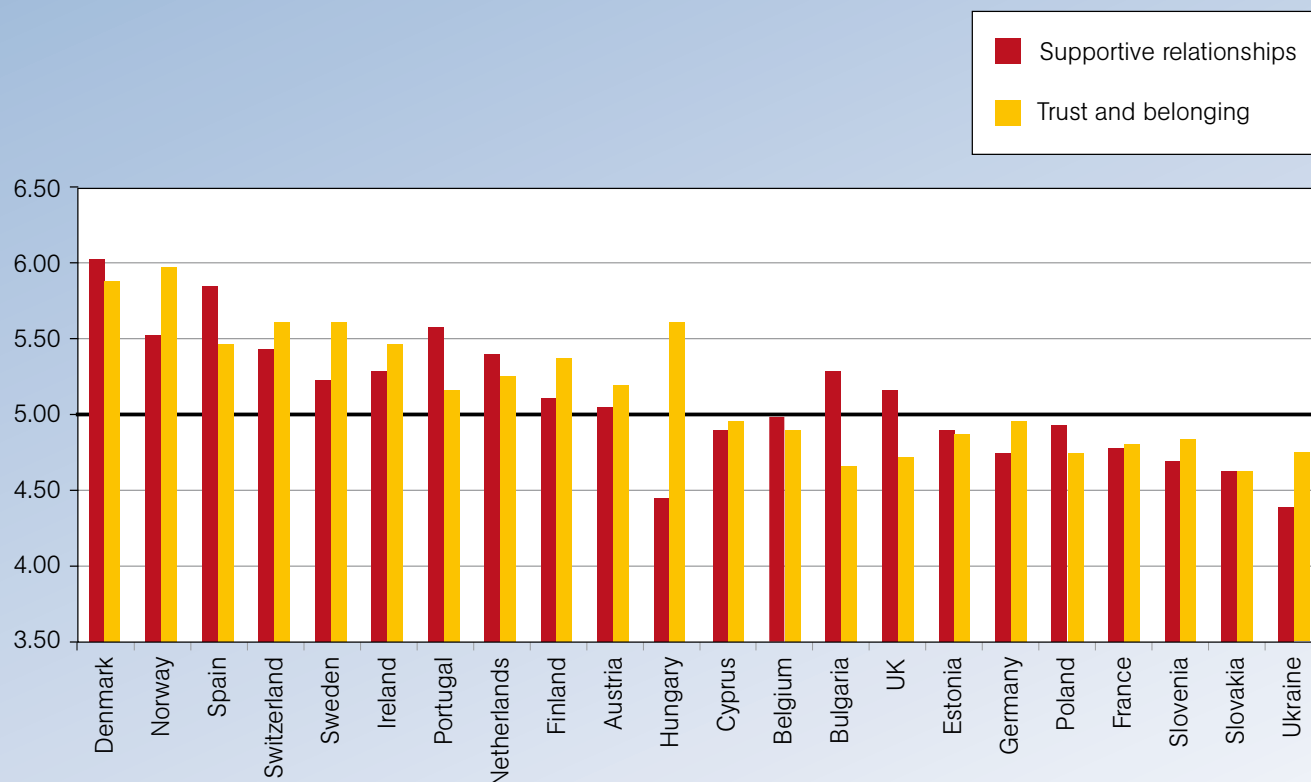


Figure 7. Social well-being: component scores for countries ranked by overall social well-being.



represent the strong connections people experience with those who are close to them, and ‘thin’ relationships the more numerous connections people establish with those they encounter in broader social spheres. Comparing these aspects, as in Figure 7, shows that people’s feelings about the quality of their relationships with those close to them often differ substantially from the extent to which they feel a sense of trust and belonging with those around them more broadly.

In some countries, the scores for the two components are fairly close. France, for example, has similarly low scores on both components, placing it in the bottom four countries on social well-being. In the UK, by contrast, people are far more positive about their close relationships with family and friends than about their sense of trust and belonging with people in general.^{68,69} Only Bulgaria, ranked next to the UK on overall social well-being, has a similar fall in its score for *trust and belonging* compared to its *supportive relationships* score. In Hungary the difference is in the opposite direction, but here the gap in its two component scores is even bigger: it has the second-lowest score in Europe for *supportive relationships* and the third-highest for *trust and belonging*. These examples demonstrate that the societal structures which lead to people experiencing good relationships with their friends and family members do not guarantee that their sense of connection to those in their broader community will also be good, and *vice versa*. Yet both of these components are central to well-being and may require different policy responses in order to address them effectively.

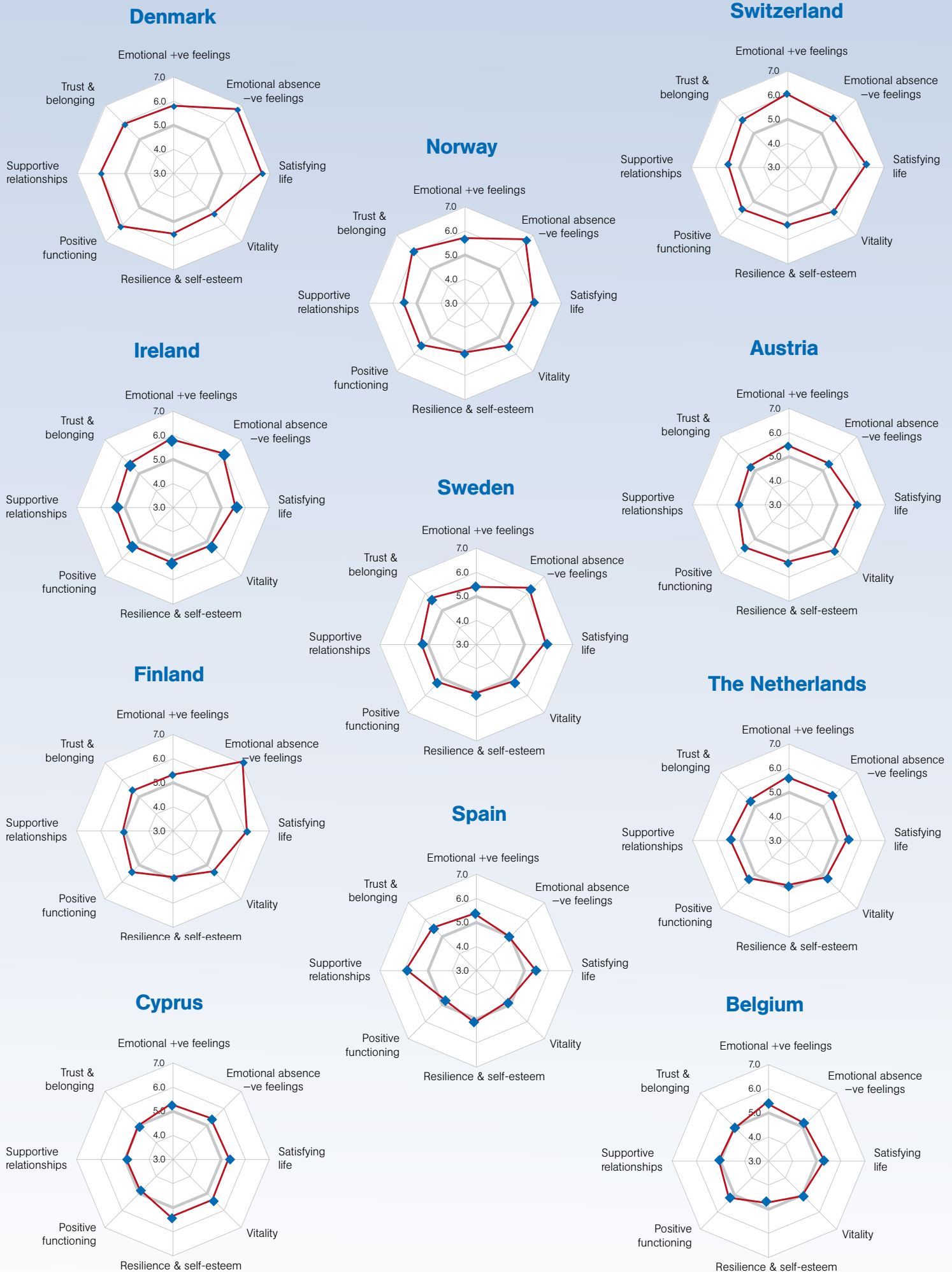
National Well-being Profiles

Bringing together all the scores for the main components provides a picture of the character of well-being within the different countries of Europe.⁷⁰ The scores can be graphically represented on a 'Well-being Profile', which provides a visual summary of a country's levels of well-being (shown by the red line) compared to the European average (shown by the dark grey line). The Well-being Profiles for all 22 countries are shown overleaf in Figure 8.

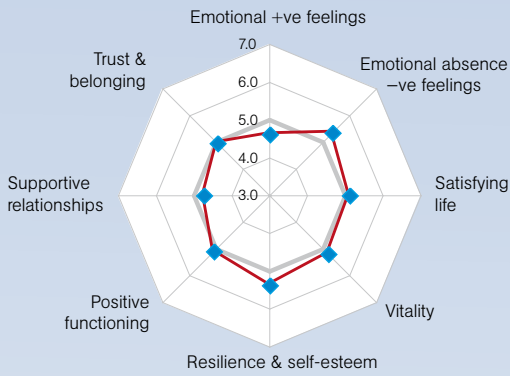
Comparing Well-being Profiles helps to uncover differences in countries which are similar on other measures of national welfare. For example, Finland and France have very similar levels of GDP per capita and have the same score on the UN's *Human Development Index* (which combines measures of GDP, life expectancy and knowledge and education), but France ranks substantially below Finland on both personal and social well-being. Their Well-being Profiles help to explain what causes this difference in rankings. Finland's Well-being Profile shows it coming slightly above average on all components, apart from *emotional well-being – absence of negative feelings* and *satisfying life*, where its performance is substantially above average. A similar pattern can in fact be seen in the Well-being Profiles of each of the Scandinavian countries. France, on the other hand, presents a much more consistent picture, with scores close to the average on all well-being components, and none that are particularly high or low. Countries displaying similar patterns include the Netherlands, which scores considerably higher on each component than France, and Slovenia, ranked next to France on its overall personal and social well-being scores.

Well-being Profiles can also point to differences between countries with similar headline scores. For example, Estonia, Portugal and Hungary, which are ranked closely on their headline personal well-being scores, have Well-being Profiles which suggest very different pictures of experienced quality of life in each country. Estonia's Well-being Profile shows it scoring at or slightly below the European average for each well-being component, but without any scores that stand out as extremely low compared to the others. Portugal shows a more mixed picture, with component scores close to the European average as well as considerably below and above it. Hungary shows some even more marked contrasts, with a very low score for *emotional well-being – absence of negative feelings* and a considerably above-average score for *trust and belonging*. The Well-being Profiles provide a clear picture of how policy to bolster population well-being in each country might need either to be closely targeted on particular components, or aimed at improving well-being more generally.

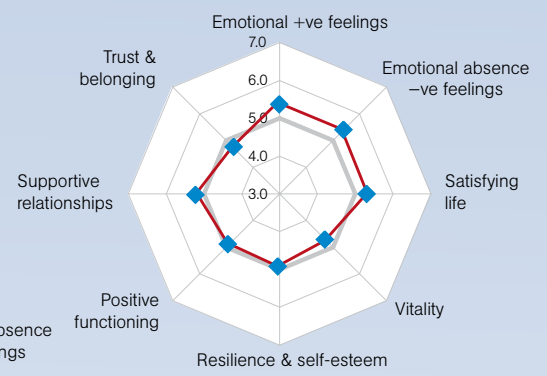
Figure 8. Well-being Profiles for all countries.



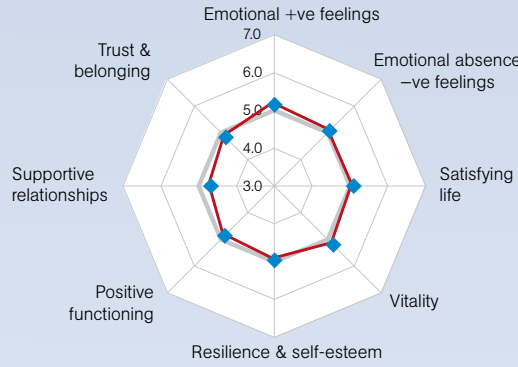
Germany



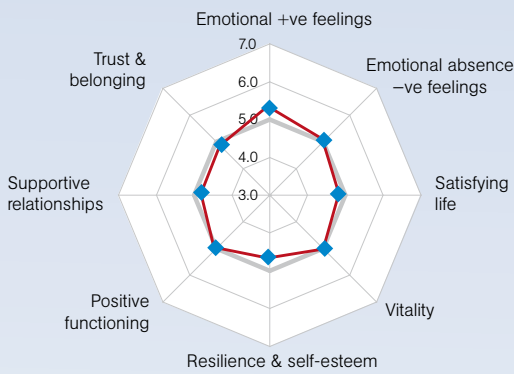
UK



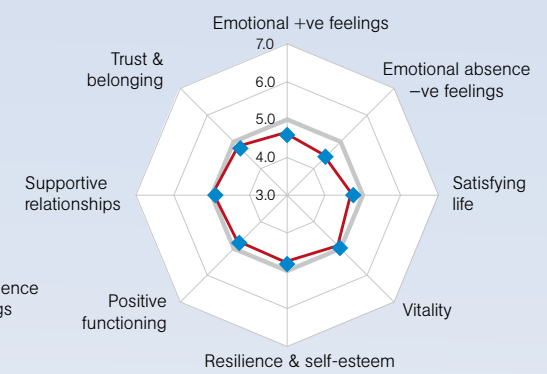
Slovenia



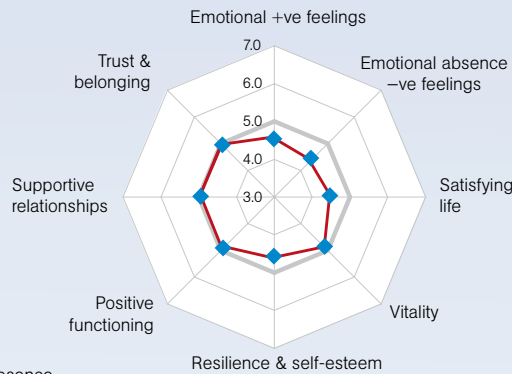
France



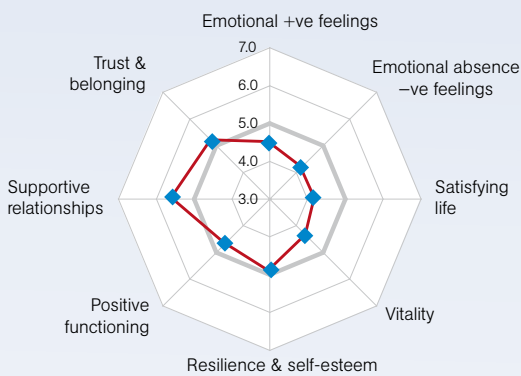
Poland



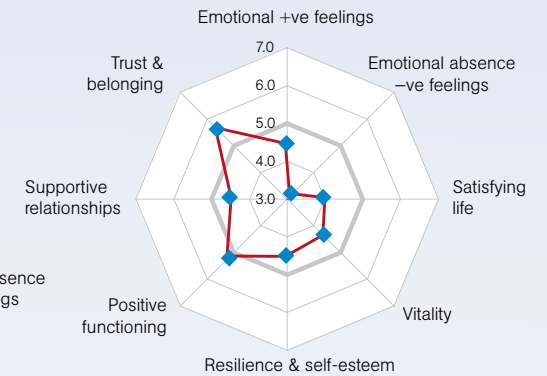
Estonia



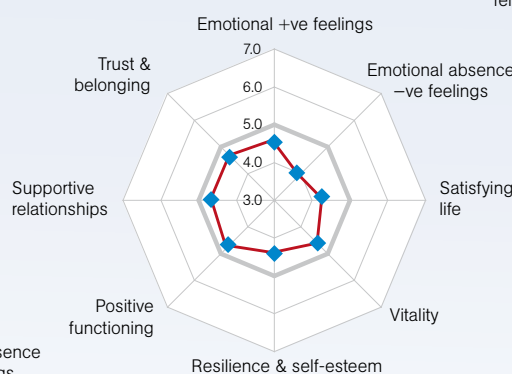
Portugal



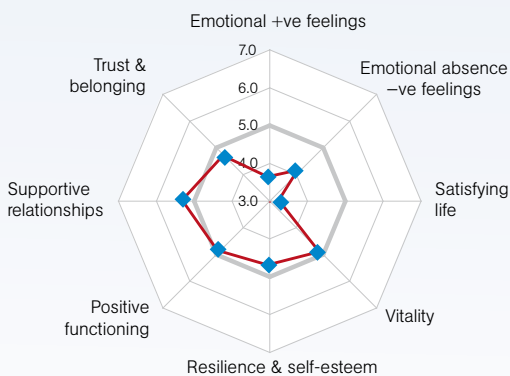
Hungary



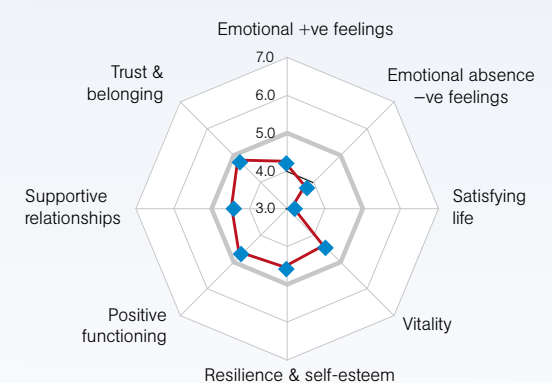
Slovakia



Bulgaria



Ukraine



Within-country differences in well-being: a UK case-study

Beyond comparison between countries, National Accounts of Well-being are also valuable in allowing a detailed assessment of the subjective experiences of different groups within a single country. To demonstrate the types of findings that can arise given what we know about this sort of analysis, this section presents example results for groups within the UK. Exploration at this level for all of the countries included can be undertaken at www.nationalaccountsowellbeing.org

Figure 9 shows that men in the UK have higher levels on many components of personal well-being than women, although there is no statistically significant difference on the *satisfying life* component or social well-being (*supportive relationships* and *trust and belonging*) components. While this mirrors the finding that men's well-being is higher across Europe, it is interesting to note that in the UK the biggest differences between the genders occur for *emotional well-being* – *absence of negative feelings, resilience and self esteem* and *vitality*.

The Well-being Profiles of the youngest and oldest age groups in the UK (Figure 10) reveal some striking differences. There is a particular disparity in the scores of the two age groups for *trust and belonging*, with a very low score for the youngest age group and a high score for the oldest. While the 75+ age group has a reduced score for *vitality*, as might be expected given what we know about the ageing process, it scores somewhat higher than the youngest group on many of the other components. It is these types of insights which open the door for meaningful policy discussions. So, for instance, should a country like the UK target specific policies towards building feelings of trust and belonging among young people, or is it better to accept that these feelings change through the life course and young people are inevitably more likely to experience attachment and social interaction with peers and family members rather than through a wider sense of belonging? Conversely, with *trust and belonging* clearly high and important for many aged 75+, might we take better account of this in how future policy proposals are evaluated to ensure that those targeted towards older populations are 'proofed' to ensure this well-being component is safeguarded?

Examining the within-country differences at a subcomponent level can also produce interesting results. Looking at how the four subcomponents of *positive functioning* vary by income group in the UK, Figure 11 shows that *competence* and *engagement* increase as income increases, with a particularly low level of *engagement* in the lowest income group. There is a much more modest increase for *meaning* with income, while the level of experienced *autonomy* decreases as income increases, apart from a slight recovery for the highest income group. These results suggest that being on a low income in the UK entails living with low well-being as well as experiencing financial disadvantages, but also show that earning a higher income seems to involve a trade-off in terms of experienced autonomy. Further investigation of these relationships might help UK policy-makers to identify how people can be helped to boost the different elements of positive functioning alongside ensuring their financial security. In the current climate of global financial insecurity, understanding these effects becomes even more important.

Figure 9. Well-being components for men and women in the UK.

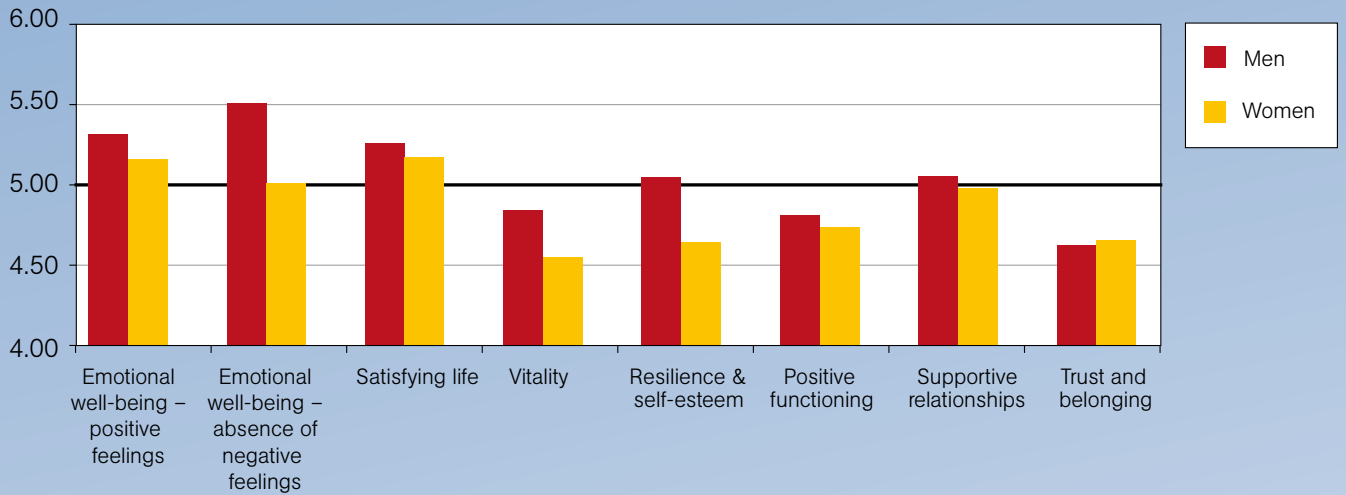
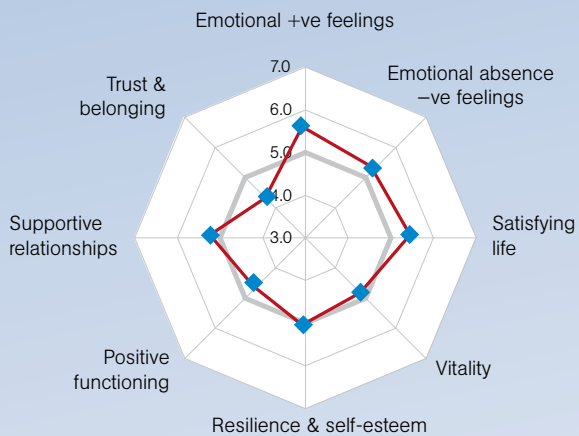


Figure 10. Well-being Profiles for youngest and oldest age groups in the UK.

Age group: under 25



Age group: 75 plus

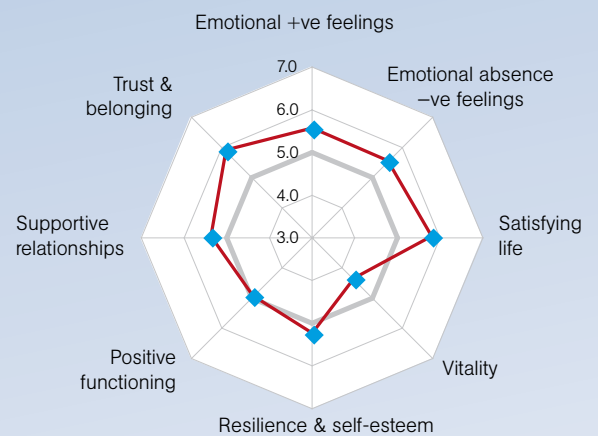
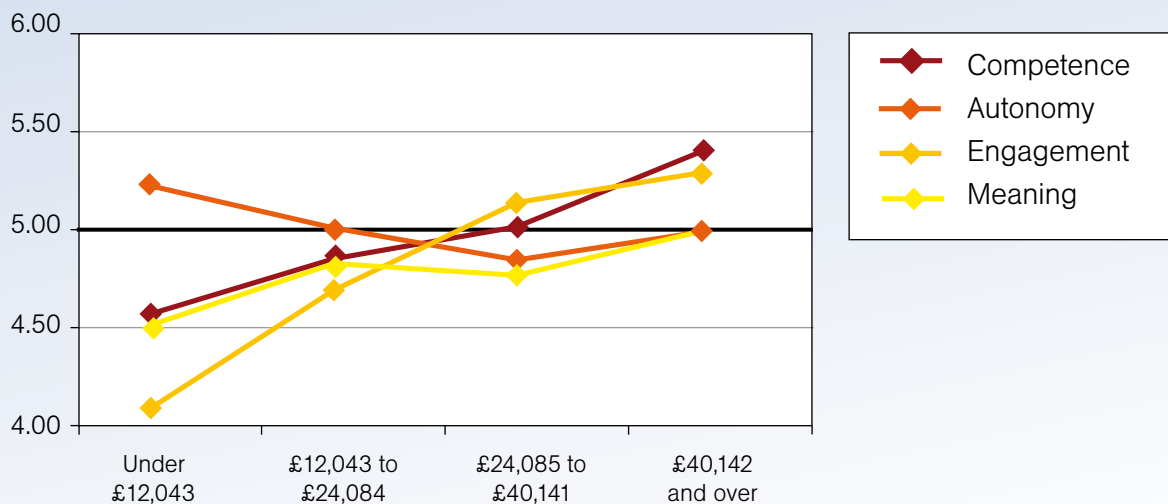


Figure 11. Sub-components of positive functioning by annual household income,⁷¹ United Kingdom.



7. Findings 3: Well-being and life conditions

A key use for national accounts indicators is to help policy-makers understand the relationships between the *conditions* of people's lives and their *experiences* of their lives. This section presents examples of these sorts of analysis.

External conditions and well-being

Table 3 summarises the results from regression modelling in which objective information, given by European Social Survey respondents across Europe, is used to predict their scores on each component of well-being. The direction of the arrows indicates the direction of the relationship between the objective factor and the well-being component: upwards arrows show that the factor tends to be associated with increased scores (and downwards arrows with decreased scores), with more arrows indicating larger increases/decreases. The absence of an arrow indicates that there is no statistically significant relationship.

Some objective factors have fairly consistent relationships with all the components of well-being. Volunteering, for instance, is associated with moderately increased scores on all components of personal well-being. Being hampered in daily activities by being ill or disabled with is associated with decreased scores, although with stronger effects for components of personal rather than social well-being.

Other objective circumstances and behaviours relate differently to the various components. For example, bigger increases in *positive functioning* scores are predicted by trust in institutions and by holding values which are intrinsically rather than extrinsically motivated, than by more objective factors such as income and being in paid work. This suggests that working to promote these trust- and value-related aspects of society may be a more productive way to enhance people's positive functioning than simply concentrating on their economic welfare.

Looking across the different components also reveals varying relationships. Spending more time watching television predicts decreased scores for the *satisfying life*, *vitality*, *functioning* and *trust and belonging* components, but not for *emotional well-being*, *resilience* or *supportive relationships*. Being female is associated with decreased scores for *emotional well-being – absence of negative feelings*, *vitality* and *resilience and self-esteem*, but increased scores for *satisfying life* and *trust and belonging*. These different effects highlight the importance of looking at the complete picture of people's experiences of their lives as revealed by the full range of well-being components.

Overall, these sorts of results suggest how the things that governments do – both through the mainstream policy-making process and through their wider influencing role on the choices of individuals – can impact on aspects of people's well-being in different ways. National Accounts of Well-being would provide a consistent basis on which to monitor and make sense of these different ways and understand how results change over time or differ between population groups or subnational geographies. The results suggest that reducing deficits (e.g., illness, involuntary unemployment, fear of crime) remains an important goal of national level policy-making if population well-being is to be enhanced but that promoting positive well-being also has a vital role to play, for example by encouraging intrinsic values, trust in institutions and participation in local activities.

Table 3. Regression results – relationships between external conditions and well-being components.

	Personal well-being	Emotional well-being – positive feelings	Emotional well-being – absence of negative feelings	Satisfying life	Vitality	Resilience & self-esteem	Positive functioning	Social well-being	Supportive relationships	Trust & belonging
Life circumstances										
Gender: being female	↓			↑	↓	↑		↑	←	←
Being under 25	↑	↑	↑	↑		↑		↑	←	←
Being over 60	↑	↑	↑	↑		↑		↑	←	←
Belong to minority ethnic group	↓	↓	↓	↓		↓		↓	←	←
Living with a partner	↑	↑	↑	↑	↑	↑		↑	←	←
Living with children	↓	↓	↓	↓	↓	↓		↓	←	←
Income	↑	↑	↑	↑	↑	↑		↑	←	←
Level of education	↑	↑	↑	↑	↑	↑		↑	←	←
Hampered by being ill/disabled	↓↓	↓↓	↓↓	↓↓	↓↓	↓↓	↓	↓	↓	↓
Living in rural area	↑	↑	↑	↑	↑	↑		↑	←	←
Main activity										
Main activity: paid work				↑	↓	↑	↑		←	←
Main activity: education				↑		↑	↑		←	←
Main activity: unemployment	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓
Main activity: long-term sick	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓
Main activity: retired	↑	↑	↑	↑		↑		↑	←	←
Main activity: looking after home										
Attitudes										
Fear of crime	↓↓	↓	↓	↓	↓	↓	↓	↓	↓	↓
Trust in institutions	↑	↑	↑	↑	↑	↑	↑	↑	↑	↑
Intrinsic values ⁷²	↑	↑	↑	↑	↑	↑	↑	↑	↑	↑
Time use and leisure activities										
Number of hours worked	↓			↓	↓	↓	↓	↓	↓	↓
Time spent watching TV	↑	↑	↑	↑	↑	↑	↑	↑	↑	↑
Time spent volunteering										
Time spent helping others										
Attend local activities	↑	↓	↑	↑	↑	↑	↑	↑	↑	↑
Attend religious activities	↑	↑	↑	↑	↑	↑	↑	↑	↑	↑

Country-level conditions

We also explored how country-level factors such as public expenditure on health, governance statistics, and GDP per capita affect national average well-being levels. With the analysis limited to 22 countries, few effects could be determined robustly. It seems, however, that increased public expenditure on health and education, and quality of governance⁷³ is associated with some aspects of personal and social well-being, though of course a causal relationship cannot be assumed from this. Interestingly, the population of a country appears to be *inversely* related to two of the subcomponents of *positive functioning* – *autonomy* and *meaning and purpose*.⁷⁴ Individuals in smaller countries find it easier to experience these feelings.

Of the country level factors we explored, however, it is GDP per capita which is dominant, being the best predictor of country means for nine out of the thirteen well-being indicators we tested (Figure 12).⁷⁵ This is not surprising, given our discussion of the Easterlin paradox in Section 2, where we noted that higher GDP per capita is often found to be related to higher well-being when comparing across countries at a given point in time, although increases in GDP per capita over time have not been found to lead to increasing well-being.

In the European context in particular, it is hard to make any claims regarding causality based on this finding. The countries with the highest per capita GDPs in Europe (mostly Scandinavian), are also those with the best levels of governance, the highest social capital, the strongest social care systems, the lowest inequality, and many other concurrent features. Similarly, the countries with the lowest per capita GDPs, mostly transition countries, suffer many other concurrent problems, such as high unemployment, poor social capital, rising inequality, and a Communist legacy which has not disappeared. The relative importance of all these various factors in determining well-being is a complex debate. Recent analysis we conducted for another study found that life expectancy, voice and accountability, climate and natural capital were more important than GDP per capita in predicting mean levels of life satisfaction across 79 developing and developed countries.⁷⁶ One finding of note is that when we attempted to include national GDP per capita in regression models for predicting personal well-being at the *individual* level, we found its effect mediated by the individuals' household income, and also their trust in the nation's institutions. In other words, GDP per capita does not determine personal well-being directly, but rather it is – unsurprisingly – relevant to household income, and appears to correlate with the trustworthiness of national institutions. If anything, it is the latter which appears to be a stronger determinant of well-being (Figure 13).⁷⁷

Where our country-level analyses diverge slightly from previous findings is that the indicator of personal well-being seems to continue rising linearly with increasing GDP per capita (and of course concurrent increasing individual income and trust in institutions), rather than tailing off as the single-item life satisfaction question does.⁷⁸ This may demonstrate that our new indicators have resolved one of the key problems cited regarding life satisfaction as a measure of well-being – that it loses sensitivity as higher levels are reached.⁷⁹ Critics have argued that once people get to a level of life satisfaction that correlates to reporting, for example, a '7' or '8' on the 0–10 scale, there isn't very much further up they can go. The scale is 'bounded'. The concern is that it, at the higher end of the scale, it is personality, or perhaps culture,⁸⁰ that determines whether we go for the extreme scores of '9' or '10', rather than a more humble '7', and not genuinely higher life satisfaction. Our headline National Accounts of Well-Being indicators bring together data from 41 questions, making sensitivity right up to the highest levels of well-being much more likely. While the highest *possible* personal or social well-being score is 10 and is achieved by a handful of individuals, no country comes close to achieving such a high score for all its citizens. Even Denmark only achieves 5.96 on personal well-being and 5.89 on social well-being – if there is an upper bound to this scale, European countries are all far from it.

Well-being in life domains: well-being at work

In addition to exploring how external life factors affect the components of well-being, national accounting indicators can also contribute to a textured understanding of well-being through examining people's experiences within

Figure 12. Personal well-being and GDP per capita, all countries.

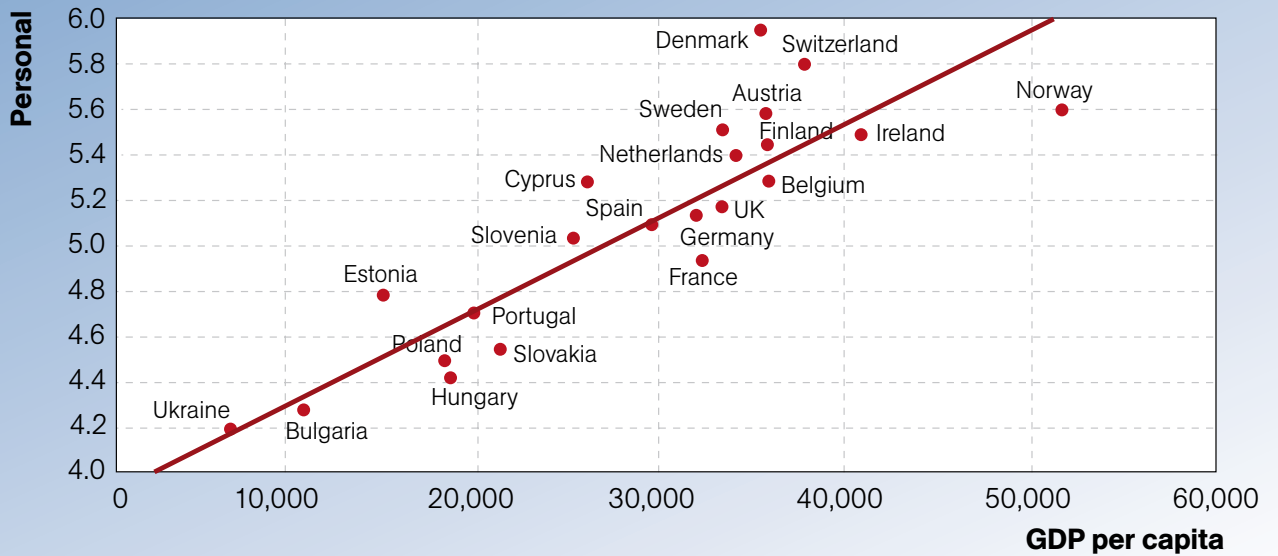
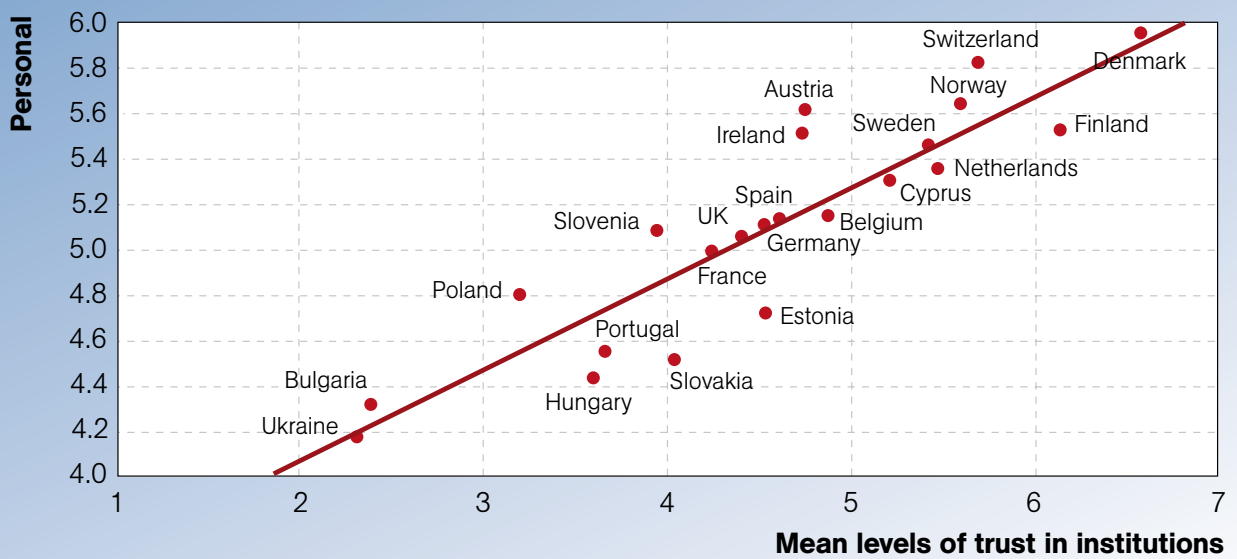


Figure 13. Personal well-being and trust in institutions, all countries.



different domains of their lives, that is, in relation to their health, work, the area where they live and so on. The European Social Survey well-being module included a small number of questions about experiences of paid work. This has enabled the construction of an indicator of *well-being at work*, as an example of an indicator of well-being within a life domain.

There are good reasons for considering the work domain a worthy focus for attention. Although considerable numbers of the adult population of developed countries do not undertake paid work, for those who do, their working lives represent a significant proportion of their daily experience, with many spending more time at work than carrying out any other activity in their lives. Work is also a domain that has the potential to support many elements of well-being, particularly through connectedness to colleagues and through opportunities to experience

positive functioning through competence, meaning and engagement with work. While the indicator presented here is based on a small number of survey questions relating to key aspects of experience at work,⁸¹ a more detailed measure could in fact include each of the well-being components discussed in this report as they relate to the work domain. This would measure, for example, people's emotional well-being while at work, their positive functioning at work, supportive relationships at work and so on. This model could also be extended as the basis for detailed well-being measurement within different life domains.

The results by country from the well-being at work indicator, shown in Table 4, demonstrate the value of looking separately at this domain, with country rankings displaying substantial differences from ranks according to personal or social well-being. Cyprus has a particularly high score for well-being at work, considerably above that of any other country, so that it is ranked much more highly on this indicator than for personal and social well-being. The Netherlands, in third place, also shows a considerable improvement from its personal and social ranks. In general, a country's well-being at work ranking is more different from its social than from its personal ranking. This could suggest that the work domain is particularly important in providing opportunities for experiencing the components of personal well-being. By constructing a set of domain-level well-being indicators, these sorts of issues could be explored at a national level.

The future potential of national accounting results

The preliminary results of our working model of National Accounts of Well-being show how its measures can be used as a way of comparing the progress of nations, and identifying how different components of well-being, as well as particular groups, could be targeted through policy intervention to bring about improvements in well-being. In many ways, these results represent only a 'pre-baseline' to the regular national accounting reporting that we are calling for, given that the framework is likely to undergo substantial further development before being implemented by national governments. This is not to diminish the value of the results here, which reveal substantial differences in the levels and composition of well-being across Europe, and therefore imply differing degrees of success of social structures and policies in ensuring that people both feel good and do well in their lives.

These results, however, cannot demonstrate the full purpose of a national accounting system, a key function of which will be to allow tracking of well-being over time. It is these regular, repeated measurements that will begin to allow the specific effects of policy decisions on the different aspects of well-being to be examined, and make possible modelling to predict the likely well-being impact of future decisions. The potential of National Accounts of Well-being to help governments improve the lives of their citizens is therefore much greater than the data presented here are able to describe, with a growing power as future measurements contribute to a robust time-series.

Table 4. Well-being at work.

	<i>Rank</i>	<i>Score</i>	<i>Difference from personal rank⁸²</i>	<i>Difference from social rank</i>
Cyprus	1	5.86	↑↑	↑↑↑
Denmark	2	5.66	↓	↓
Netherlands	3	5.60	↑↑	↑↑
Switzerland	4	5.50	↓	–
Austria	5	5.47	↓	↑↑
Norway	6	5.46	↓	↓↓
Belgium	7	5.44	↑	↑↑
Ireland	8	5.43	↓	↓
Spain	9	5.22	↑	↓↓
Sweden	10	5.21	↓	↓↓
Finland	11	5.16	↓↓	↓
France	12	5.07	↑	↑↑
Slovenia	13	5.05	↑	↑↑
Portugal	14	5.05	↑↑	↓↓
UK	15	4.98	↓	–
Germany	16	4.88	↓↓	↑
Hungary	17	4.85	↑	↓↓
Estonia	18	4.76	↓	↓
Slovakia	19	4.73	–	↑
Bulgaria	20	4.69	↑	↓↓
Ukraine	21	4.52	↑	↑
Poland	22	4.43	↓↓	↓↓

8. How governments will use National Accounts of Well-being

Our proposal to measure National Accounts of Well-being intends ultimately to shift the goalposts for what nations regard as success. The aim is to bring about change in how societies shape the lives of their citizens. If they are to be effective, National Accounts of Well-being therefore need to influence the design of policy made by international, national and local governments.

This section considers two key aspects of the relationship between government action and National Accounts of Well-being: first, the broader context within which our national accounts framework sits; and second, the stages of the policy-making process within which National Accounts of Well-being could play a useful role.

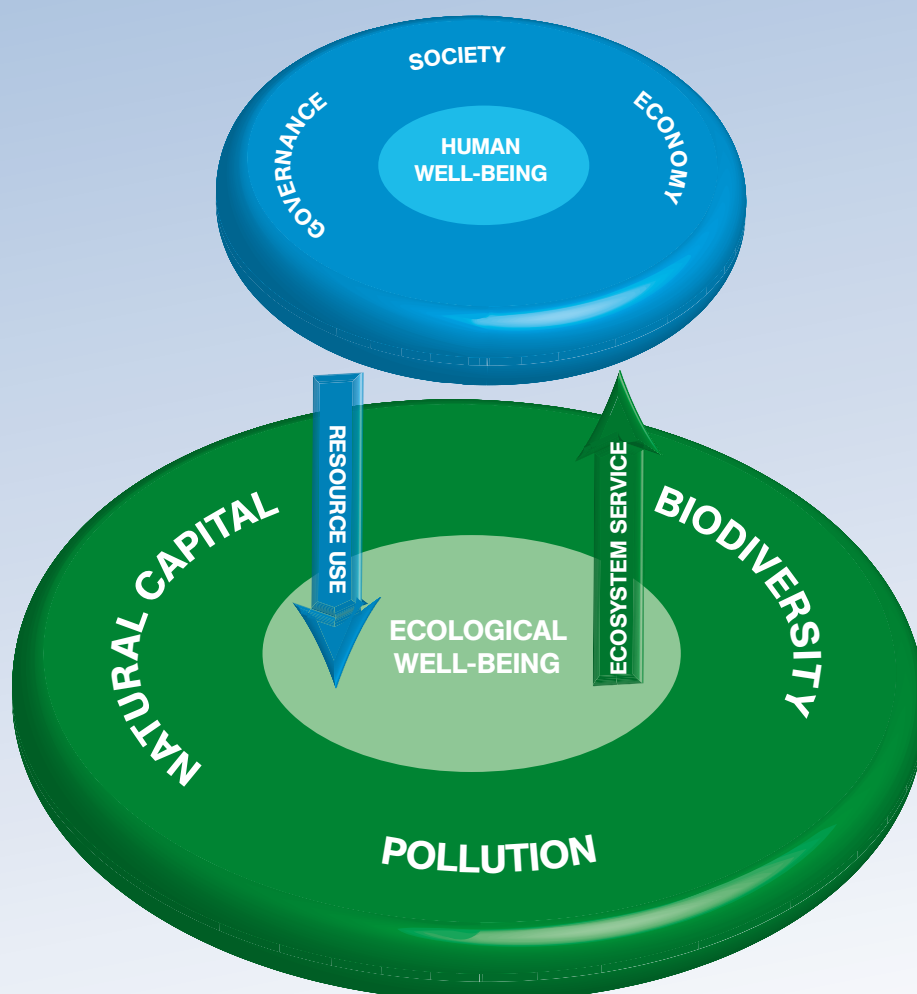
The broader context

Despite the wealth of information contained in the results of our national accounting indicators, they do not constitute the full picture of national progress. Depending on people's behaviours, choices, constraints, and the wider social, economic, environmental, political and cultural circumstances of their lives, their well-being can be either enhanced or undermined. We believe it is therefore important to situate National Accounts of Well-being alongside two other crucial aspects that governments should equally measure to ensure that they are doing the best for their citizens.

- **The external conditions of people's lives** – both indicators monitoring the material conditions of individuals' lives, such as the income-based indicators on which top-line societal measurement has been traditionally focused, as well as factors such as employment status and physical health; and also measures of factors which exist across society such as freedom and government accountability.
- **The ecological sustainability of society's resource use** – the degree to which the Earth's finite resources continue to be available to enable people's welfare in the future is a crucial issue for governments. Enjoying good experiences today at the cost of substantial pain tomorrow cannot be said to be a mechanism for producing true overall well-being; measures of the ecological sustainability of a society are therefore crucial.

The Canadian statistician Robert Prescott-Allen has specifically addressed the issue of how national indicator sets should best be designed to include measures of subjective well-being alongside measures of welfare from other spheres. He has advised the OECD on possible structures for national well-being indicators, using the expression 'well-being' to include human welfare, both subjective and objective, as well as the state of the broader eco-system on which all human activity depends. The schematic diagram resulting from his work shows one such possible structure.⁸³ We present an adapted version in Figure 14. Core measures of human well-being, such as the national well-being accounts presented in this report, are surrounded by measures at society level, such as the economy and governance system through which human well-being is enabled. This human layer of activity exerts pressure on the overall eco-system well-being which is described via measures such as natural capital and biodiversity (and is therefore not directly analogous to human well-being which is measured directly).

Figure 14. An overarching structure for National Indicators.



Placed within this type of multilayered structure of national indicators, the value of National Accounts of Well-being is enhanced. They provide an explicit mechanism for exploring the links between how lives are subjectively experienced and, on the one hand, the societal systems within which those lives are embedded and, on the other, the ecological system on which the lives ultimately depend. **nef's Happy Planet Index** is an example of an indicator which takes these different aspects and summarises them into an easily communicable indicator of the ecological efficiency with which nations deliver human well-being.⁸⁷ However a multilayered national accounting structure of this kind would allow the relationships to be unpacked, so that we better understand how actions within one sphere impact on the others.

The structure also suggests a way that National Accounts of Well-being may help to resolve the conflicts which are often seen to arise between the aims of governments both to enhance their citizens' current welfare by bolstering the national economy, and yet to protect citizens' long-term welfare by ensuring the activities of their nation are environmentally sustainable. Using subjective well-being measures – both current and predicted into the future – to balance these competing demands may provide a means of resolving this sort of policy dilemma.

In developing this type of overarching framework for measures of progress, we would encourage governments to consult widely with their citizens, to help ensure that the indicators they include reflect public views of what constitutes societal progress.

Box 5. The five ways to well-being as policy levers for change

In 2008, **nef** was commissioned by the UK Government's Foresight Project to review the inter-disciplinary work of over 400 scientists from across the world.⁸⁴ The aim was to identify a set of evidence-based actions to improve well-being, which individuals would be encouraged to build into their daily lives.

As an illustration of how government action can be explicitly directed towards improving well-being, the following briefly sets out the five evidence-based ways to well-being and the sorts of policy interventions which could help to enable them.

Connect

Social relationships are critical to our well-being. Survey research has found that well-being is increased by life goals associated with family, friends, social and political life and decreased by goals associated with career success and material gains. Governments can shape policies in ways that encourage citizens to spend more time with families and friends and less time in the workplace. For example, employment policy that actively promotes flexible working and reduces the burdens of commuting, alongside policies aimed at strengthening local involvement, would enable people to spend more time at home and in their communities to build supportive and lasting relationships.

Be active

Exercise has been shown to increase mood and has been used successfully to lower rates of depression and anxiety. Being active also develops the motor skills of children and protects against cognitive decline in the elderly. Yet for the first time in history more of the world's population live in urban than non-urban environments. Through urban design and transport policy, governments influence the way we navigate through our neighbourhoods and towns. To improve our well-being, policies could support more green space to encourage exercise and play and prioritise cycling and walking over car use.

Take notice

In the US, research has shown that practising awareness of sensations, thoughts and feelings can improve both the knowledge we have about ourselves and our well-being for several years. But the twenty-first century's never-ending flow of messages from companies advertising products and services leaves little opportunity to savour or reflect on our experiences. Policy that incorporates emotional awareness training and media education into universal education provision may better equip individuals to navigate their way through the information super-highway with their well-being intact; regulation to create advertising-free spaces could further improve well-being outcomes.

Keep learning

Learning encourages social interaction and increases self-esteem and feelings of competency. Behaviour directed by personal goals to achieve something new has been shown to increase reported life satisfaction. While there is often a much greater policy emphasis on learning in the early years of life, psychological research suggests it is a critical aspect of day-to-day living for all age groups. Therefore, policies that encourage learning, even in the elderly, will enable individuals to develop new skills, strengthen social networks and feel more able to deal with life's challenges.

Give

Studies in neuroscience have shown that cooperative behaviour activates reward areas of the brain, suggesting we are hard wired to enjoy helping one another. Individuals actively engaged in their communities report higher well-being and their help and gestures have knock-on effects for others. But it is not simply about a one-way transaction of giving. Research by **nef** shows that building reciprocity and mutual exchange – through giving *and* receiving – is the simplest and most fundamental way of building trust between people and creating positive social relationships and resilient communities. Governments can choose to invest more in 'the core economy': the family, neighbourhood and community which, together, act as the operating system of society.^{85,86} Policies that provide accessible, enjoyable and rewarding ways of participation and exchange will enable more individuals to take part in social and political life.

The challenge for governments will be to create the conditions within society that enable individuals to incorporate these and other positive activities more consistently into their daily lives. By measuring the impact of their decisions on the components of personal and social well-being, government can provide a great boost to efforts to shape the policy cycle to one which is explicitly well-being promoting.

National Accounts of Well-being and the policy process

In theory, then, National Accounts of Well-being, as part of an overarching structure of national indicators, are of huge potential value in helping governments to shape their policy decisions. This raises the issue of how, in practice, indicators of subjectively experienced well-being can be incorporated within the policy process.

An initial question is whether well-being should be thought of as a means or an end of policy. While experiencing well-being – feeling good and doing well – is a fundamental goal for individuals, it may not be helpful to treat it purely as such in policy terms. Given the proportion of well-being accounted for by relatively fixed individual traits and circumstances⁸⁸ and the kinds of levers policy-makers have at their disposal, thinking of subjective well-being only as a policy outcome could be counter-productive. Some evidence suggests that targeting specific aspects of positive well-being (e.g., autonomy, emotional well-being) might be an effective way to *drive* desirable behaviour changes. For instance, a sense of individual autonomy – broadly, the extent to which people feel able to make their own decisions – is seen by many as a core requirement of well-being,^{89,90} but may also enhance outcomes in a range of areas of traditional policy focus, such as people's interactions with the education system. Therefore there is a strong case for treating the aim of enhancing well-being both as a top-level outcome and as a means to achieving a host of other societal goals, in a virtuous circle approach.

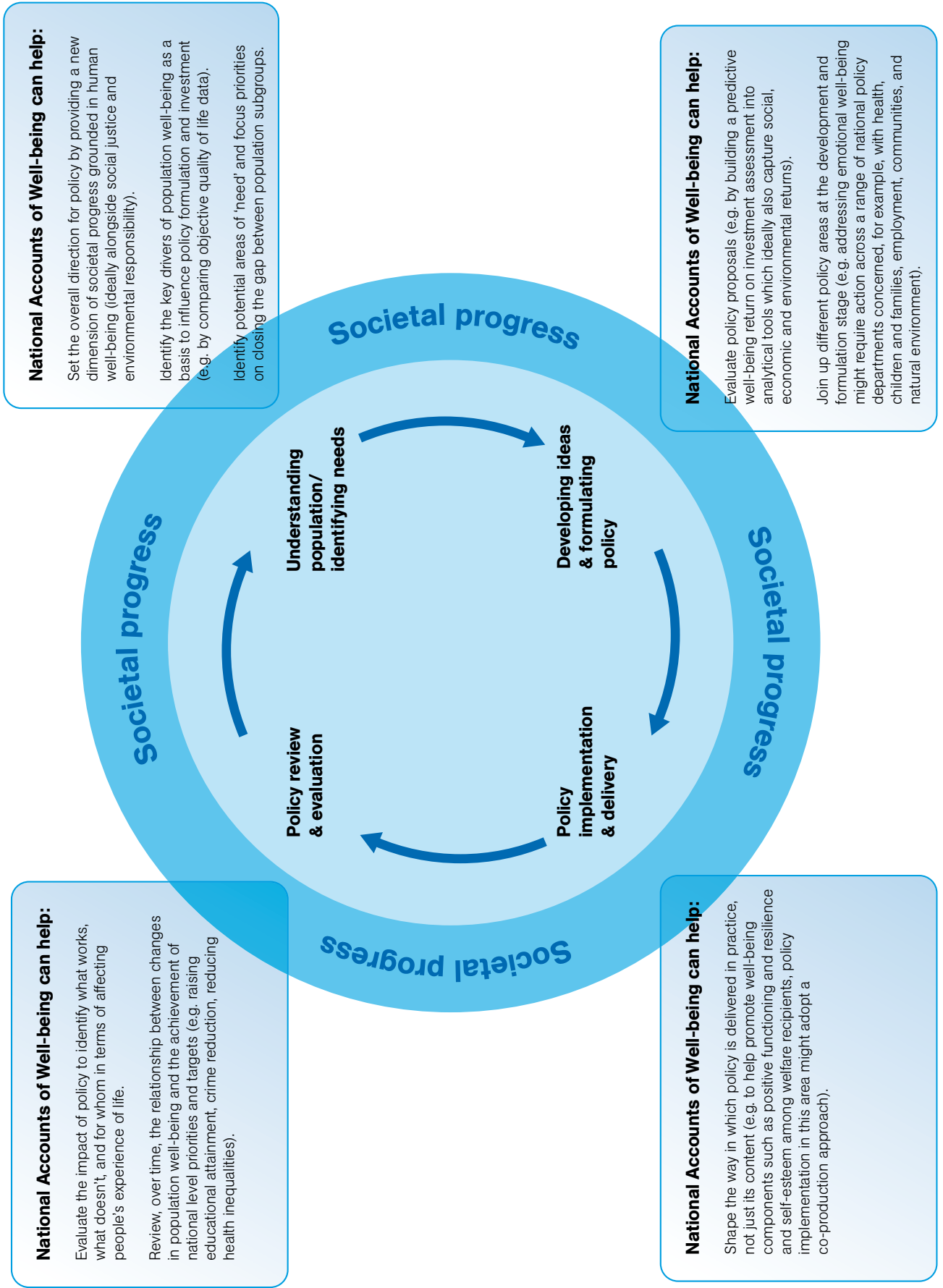
Due to its 'means and ends' character, it is possible to identify a number of different uses for regular measures of population well-being (as is the case for many national indicators). They would enable national governments to:

- Look back
 - To assess change over time
 - To review and evaluate policy decisions
 - To draw comparisons (e.g. internationally)
 - To assess differences between subgroups of the national population
- Look forward
 - To identify areas of need or opportunity
 - To evaluate the potential impacts of policy proposals
 - To shape policy formulation (e.g. content and delivery)
 - To inform the targeting of new policy (e.g. by population subgroup)

Figure 15 overleaf shows the ways in which National Accounts of Well-being could be used to achieve this range of goals at different stages of the policy-making process. While the process is deliberately described in generic terms that can apply to policy-making across developed nations, a number of clearly defined roles for the use of well-being indicators emerge at particular points of the process, from defining policy aims and identifying need, developing and shaping policy proposals, implementing and delivering particular policy interventions, to evaluating the impact of policy actions.

A strong case can be made that all policy options should be viewed as potentially having a well-being impact and so evaluated on this basis as standard. This could work on the model of UK race, gender and disability equality legislation, which places a legal duty on public authorities to undertake impact assessments to determine whether new and existing policies and practices have the potential to affect diverse groups of people differently.⁹¹ But in the absence of this system-wide assessment, a useful starting point for policy-makers seeking to increase levels of population well-being is to focus on seeking to promote and enable the core actions and behaviours which research shows most strongly improves well-being. As examples of the sorts of actions which merit this attention, Box 5 discusses the 'five ways to well-being' identified by **nef**'s recent research which constitute a concise set of core well-being-promoting behaviours.

Figure 15. The role of National Accounts of Well-being in the policy cycle.



9. Towards National Accounts of Well-being: the next steps

This report calls for the development of National Accounts of Well-being as a key measure of societal progress and as a transformative underpinning of the way in which national governments design, develop and deliver policies to improve the quality of life of their citizens.

It is our belief the rationale for such a shift is now incontestable and that the timing for action on National Accounts of Well-being is right. However our working model for national accounts, and the indicators we have used to operationalise it through the European Social Survey, represents the first chapter rather than the final story. It is the beginning of a much bigger journey which requires politicians, policy-makers, researchers, analysts, citizens, practitioners and organisations coming together at national and international levels to evolve thinking and take influential action.

There are a number of next steps which we believe are needed to take forward this agenda. Actions are required at different levels: at national government level; between governments; and among the public at large and the broad range of people who want to contribute to the debate. We outline some of these next steps below.

Actions for national governments

Make manifesto commitments on National Accounts of Well-being

National governments and political parties across Europe should pledge a manifesto commitment to introduce new measures of progress and, more particularly, to adopt National Accounts of Well-being.

In the UK, **nef** is seeking a manifesto commitment from all three of the major political parties (the Labour Party, the Conservative Party and the Liberal Democrats) to develop National Accounts of Well-being. All parties claim to share the goal of improving citizens' quality of life and well-being and have, to a greater or lesser degree, been actively engaged in recent debates about the role of well-being in policy and politics.

Following the Early Day Motion submitted in support of the work of the French Stiglitz Commission, a further motion for debate in the House of Commons in December 2008 called for 'official and regularly conducted statistics on national happiness and well-being to inform policy-making'. This is an encouraging sign that at least some politicians are beginning to appreciate the importance of national-level well-being measurement; we urge those MPs who have not already done so to sign the EDM so that adequate parliamentary time is given to this crucial issue.

Elsewhere, similar manifesto commitments are also needed. As in the UK this must be matched by concerted action by individuals and organisations within each nation to ensure rhetoric becomes reality.

Task national statistical offices to measure well-being

Listening to, learning from and building the capacity of our statistical experts in the drive towards National Accounts of Well-being is crucial. We recommend the establishment of a well-being network of national statistics bodies bringing together senior statisticians and analysts from across Europe's national statistical offices. This network should also include representatives from Eurostat, the statistical office for Europe.

The role of the network should be to advise on the development of National Accounts of Well-being, to shape the implementation of well-being indicators in national surveys, and to work alongside policy-makers to explore how the results might be used in practice. Some uses, for example, might be to make international comparisons, assess trends, and inform national and European policy.

Some of the early actions of the network could include:

- Screening existing national indicators – to identify those which map onto the key components and drivers of well-being identified in **nef**'s national accounts framework (and others as they emerge), also identifying where there are gaps.
- Exchanging information – to share knowledge and work already taking place at national levels to measure population well-being (for example, this might include work by the UK's Office for National Statistics to measure societal well-being).
- Piloting well-being measures – to map out opportunities to further develop and pilot measures of well-being in existing surveys and/or to explore the potential to devise new national surveys of population well-being. This should include both components of well-being as well as drivers of well-being. Similar exploration could take place regarding opportunities to undertake pan-European surveys of well-being on a regular basis.
- Stimulating and drawing on debates amongst citizens and policy-makers to inform what is measured.
- Investigating alternative ways of structuring and constructing national well-being accounts, both in terms of the conceptual elements that are included and how they are grouped together.
- Evaluating the possibilities of alternative approaches to measuring subjective well-being. For example, in their proposal for a well-being accounting system mentioned earlier, Kahneman and colleagues suggest measures based on the Day Reconstruction Method approach, where people are helped to reconstruct the feelings they experienced during a previous day by noting the sequence of events which occurred. This, they argue, would overcome problems such as people's finding it difficult to aggregate and weight their experience retrospectively (due to mis-remembering previous emotions etc.), and are assumed to be less susceptible to habituation effects, where the well-being effects of an experience diminish because we become more used to them or because they lead to increased expectations.⁹² While these type of methods are potentially more expensive than standard surveys, the particular advantage of this approach is that it is tied to time-use, and hence would allow potentially greater understanding of how intentional activities and behaviours affect well-being.
- Examining the potential to establish government-led rolling well-being measurement tools, on a similar model to the privately sponsored US Gallup-Healthways Well-Being Index, which since January 2008 has surveyed 1000 Americans every day, and (for those who pay for access to the data) has allowed daily changes in well-being levels to be tracked alongside events as they happen.

Measure and act on well-being within the broader context of societal and environmental sustainability

The broader context to National Accounts of Well-being must be a continued feature of discussion and action at national and European levels as they are further developed. This report focuses specifically on people's subjective well-being and quality of life. However, we do not claim this to be the only goal worth pursuing or one which should be elevated to the detriment of specific population groups, future generations, or the ecosystem on which we all depend.

nef's vision is that efforts to take forward the measurement of people's well-being are situated within a broader framework, also concerned with social justice and environmental sustainability. Accounting frameworks which combine these elements is where this journey ultimately needs to lead us. There is a need for further work on operationalising a multilayered, broad framework of progress indicators, as described in Section 8.

Box 6. OECD's Global Project on Measuring the Progress of Societies

The *Global Project on Measuring the Progress of Societies*, hosted by the OECD, aims to foster the development of sets of key economic, social and environmental indicators to provide a comprehensive picture of how the well-being of a society is evolving. It seeks to encourage each society to consider in an informed way the crucial question: is life getting better?

For 60 years, GDP has been the dominant way in which the world has measured and understood progress. This approach has failed to explain several of the factors that impact most on people's lives and has distorted policy-making. Over the last decade a large amount of work has been carried out to understand and measure the world's progress. The Global Project is the first systematic global effort to go 'beyond GDP' by enabling and promoting new ways to measure societal progress. The progress of a society depends on understanding objective aspects of economic, social and environmental health, as well as understanding the subjective well-being of citizens. And the Global Project is pleased to see initiatives such as **nef's** *National Accounts of Well-being* that are working to provide a better picture of progress.

The Global Project is an international network of organisations from all sectors of society with partners including the World Bank, United Nations Development Programme, UNICEF, international development banks, the European Commission and the Council of Europe and associations with research institutes, NGOs, and statistical offices from both developing and developed countries.

The Project has three main goals:

- **What to measure?** In order to measure progress we must know what it looks like and so we are encouraging debate about what progress means in different societies. The Project is developing methods and guidelines to carry out these debates effectively.
- **How to measure progress?** The Project is developing best practices in how to measure progress and its component parts, some of which are not yet measured well using existing statistical indicators.
- **Ensuring new progress measures are used.** New ICT tools offer huge potential to turn information into knowledge among a much broader swathe of citizens than those who currently access such information. The Project is developing new tools for public use.

Current streams of work include formulating guidelines for the development of 'measuring progress' initiatives and measurements not yet covered by international statistical standards, designing communication tools to increase the accessibility of progress indicator data, establishing dialogues with governments, civil society and statistical offices on progress measurement, and identifying lessons for successful sets of indicators.

At the heart of the Global Project is the development of Wiki-Progress, a global collaborative online platform that will serve as a hub and focal point of the many existing and nascent initiatives to measure societal progress at national and local levels.

Conferences and training courses will be held around the world in 2009, culminating in the OECD's 3rd World Forum on Statistics, Knowledge, Policy: *Charting Progress, Building Visions, Improving Life* 27–30 October in Busan, South Korea. See www.oecd.org/progress

Enrico Giovannini, Chief Statistician, OECD

Developing global, regional and local momentum

Encourage the European Parliament and European Commission to take a leading role

Their powers to adopt laws and establish regulations and directives with the potential to have significant influence on the well-being of citizens mean that the European Parliament and Commission must be key players alongside national governments in efforts to advance National Accounts of Well-being.

Some of the key ways in which this role might take place are:

- Encouraging co-operation between member states in the development and use of well-being accounts.

- Undertaking direct action in relation to valuing well-being as a key progress indicator at the EU level and reflecting this in what gets measured by the Commission.
- Ensuring effective dissemination of the results of initiatives led by the statistical office, Eurostat, which have specific relevance to issues around measuring subjective well-being and the establishment of national well-being accounts. For example, this would include current work, in which **nef** is involved, to assess the feasibility of developing a European well-being indicator.
- Help to foster discussion of related initiatives by other governmental and international bodies, such as outcomes from the OECD Global Project on 'Measuring the Progress of Societies' (Box 6), and results from the Stiglitz Commission when it reports in April 2009.

As representatives of citizens' views at a European level, MEPs need to ensure effective engagement with citizens around the issue of well-being and commit to action, both in the run up to the European Parliamentary Elections in June 2009 and beyond.

In addition to these individual actions, the potential exists for Europe-wide revision of the overall direction of policy and government focus. The 'Lisbon Agenda', launched at a European Council meeting in 2000, set out as a primary target for member countries the goal of achieving 3 per cent annual economic growth. But the OECD's Istanbul declaration, to which the European Commission is also a signatory, states a 'commitment to measuring and fostering the progress of societies in all their dimensions', suggesting that there is scope for a dialogue between European governments that would allow them to re-shape their agenda so that improving human well-being is treated as their primary concern. An inter-governmental public commitment to treating well-being as an overarching goal would, both symbolically and practically, be hugely significant in helping to take forward National Accounts of Well-being.

Promote greater dialogue between international, national and local actors in the development of well-being accounts

Alongside the work taking place to develop National Accounts of Well-being, substantial activity is also evident at supra-national and subnational levels. Efforts which stretch beyond national boundaries include those currently being led by the OECD and Eurostat⁹³ whilst many countries have in place a range of initiatives and activity to measure well-being subnationally. This includes examples from localities such as Victoria (Australia), Durban, British Columbia, and Barcelona, many of whom are now measuring subjective well-being alongside objective quality of life indicators. Previous work by **nef** also highlights the particular opportunities afforded to local government (and their partner agencies) in England and Wales to make further advances in measuring local well-being, with some local areas already taking action.⁹⁴

We encourage the development of well-being accounts at different spatial scales and urge further dialogue and joined-up action amongst all those involved in taking this forward, both within and between countries. This could be in terms of:

- Well-being components – are there some components of population well-being which are of greater relevance at a local level compared to national level, or *vice versa*?
- Data collection and collation – should national accounts be constructed 'from the ground up' and build on a sophisticated set of local well-being accounts for each administrative area, or should local accounts be compiled separately?
- Information sharing and analysis – how can well-being accounts developed at different spatial scales best be brought together for analysis and interpretation?
- Communication – what is the most effective way of keeping the public informed about the outcomes of well-being measurement at different spatial scales in ways which are clear, accessible and interesting?

Achieving broad engagement across society

Mobilise public support

Greater mobilisation of the public in relation to the importance and benefits of looking beyond GDP, and more specifically to measuring subjective well-being through national accounts, is now vital. Academic debate on the value of measuring people's subjective well-being and taking forward national accounts has been increasingly evident over recent years. This is now being matched with growing support from citizens for governments to look beyond economic indicators alone when measuring national progress.

As noted earlier, in responses to opinion polls, members of the public say that they are very much in favour of government goals being framed in terms of happiness and broader welfare measures rather than simply the economic. But passive, albeit positive, responses to opinion polling alone are not enough to exert political pressure and to stimulate debate about the role of well-being measures in matters of national policy. Now that there are more tangible possibilities for National Accounts of Well-being, there is a need to step-up efforts to increase citizen engagement on the issue and to put pressure on politicians to redefine anachronistic notions of progress which do little to capture what really matters to people's experience of everyday life.

But how do we do this? One would imagine that progress indicators and statistical analyses are not generally hot topics of conversation over the dinner table or around the workplace photocopier. Yet the outcomes being sought through the development of National Accounts of Well-being are precisely the kinds of things the majority of citizens do care about. We therefore need to find effective mechanisms to engage the public on this issue, and communicate about it in a way which highlights its relevance to people's day-to-day life. After all, improving well-being is precisely a matter of improving people's experiences of their lives. It is therefore important to engage individuals directly by providing the tools to support them to better reflect on their own well-being and how it might be enhanced, including what governments can do in this regard.

To help start this process, the accompanying website allows individuals to measure their own well-being and compare it to national results, and to pledge their support, if so willing, for the campaign for national governments to systematically measure well-being.

Stimulate further exploration, analysis and dialogue about both the early findings and the potential structure of National Accounts of Well-being

What is the full picture of well-being across Europe? Do some countries consistently perform better than others when it comes to personal or social well-being? Why do some countries perform better on certain components of well-being compared with others? For example, why does Ireland perform substantially better than the UK on *emotional well-being* but not on *resilience and self-esteem*? In what ways might changes in national policy lead to a change in well-being outcomes?

nef has started to explore these issues but there is much more to learn from the data on national well-being and further debate to be had about how this can best be brought together in ways useful for policy. Our working model highlights a number of questions about how National Accounts of Well-being should best be composed and structured that point to the need for future research. This might include issues such as what components of well-being should be included, how different elements should be grouped together, whether the original survey measures can be improved, and what additional indicators might be included to measure the existing or additional well-being components.

Building on this report, we must now facilitate researchers, analysts, policy-makers, citizens, parliamentarians, media officials, NGOs and others to come together to engage in international and national dialogue about the what, why and how of National Accounts of Well-being.

This is why, alongside the report, we have set up an interactive website www.nationalaccountsofwellbeing.org which enables users to explore the European

Social Survey well-being data, create their own charts and maps, and upload their personal reflections and explanations for the results observed.

The dialogue which we hope stems from this is one which engages people in discussion about what they value most, how existing policy is deemed to influence a nation's well-being, and the key components and determinants of well-being that should be included in any revised or new national accounting framework. The site will also provide a space for wide-scale engagement and dialogue on new developments as they emerge.

The time is now

With the likelihood of growing constraints on public finances and the increasing pressure on national governments from economic, social and environmental changes now evident at a global scale, the issue of national governments safeguarding and promoting the well-being of their citizens is a matter of priority. But governments concerned with well-being – and it is hard to see how any national government could claim not to be – must now match this concern with a better way of finding out how their populations are faring, and when, how and why their citizens' well-being is affected for better or worse. This is not, however, simply a research-focused or technical issue driven by the desire to create ever more statistics. The ideas outlined in this report regarding the development of National Accounts of Well-being speak to the very heart of what we value as a society, calling for a fundamental rethink about our notions of progress and a transformation in the way in which we plan, deliver and evaluate policies which aim to improve people's lives. We now have compelling evidence to show that our current economic model and economic accounting frameworks are hugely limited, and that a shift to measuring success in terms of well-being is not only desirable, but necessary, if societies are to truly flourish.

Appendix 1: Measuring well-being – the limits of life satisfaction

For most of the relatively short period over which well-being research has been carried out, studies have been based on single survey questions which ask people to report their assessment of their happiness or satisfaction with life. Typically, these subjective measures take the form of responses to large-scale surveys that include a question such as: 'If you consider your life overall, how satisfied would you say you are nowadays?' Responses are given on a 0–10 scale, from 'not at all satisfied' to 'extremely satisfied'. While there is considerable evidence that such questions provide a reasonably reliable measure of overall life satisfaction, there are a number of considerations for wanting to improve the measurement of well-being beyond the use of a single life satisfaction question.

One key consideration is the recognition that a single question conceptually cannot capture the multifaceted nature of the concept of well-being. Two equally motivating reasons relate to findings from the science of psychological measurement about the lack of accuracy in single-item measures, and to the low sensitivity of life satisfaction measures to the impact of policy decisions on well-being.

All three reasons have been important considerations in the development of the structure of National Accounts of Well-being presented here, so it is worth considering each of them in some detail.

Psychometric power

The science of psychometrics – the area of psychology concerned with measuring feelings, attitudes and cognitive abilities – brings important insights to bear on well-being measurement. Psychometrics is a field without a direct equivalent in the physical sciences, where the common dimensions of measurement such as length, pressure, luminosity and so on, are external properties of the world that can be observed directly and do not depend on the perspective of any individual. Measuring them accurately is a technical issue of ensuring reliable calibration; this may not be straightforward in all cases, but there is no basic problem of identifying the property to be measured.

As a matter of definition, however, subjective psychological states are *not* directly observable because they are hypothesised to exist within the mind of the individual. Someone who is anxious may exhibit certain characteristic behaviours (wringing their hands, pacing up and down, etc.) but these are not identical with what it means to 'be' anxious – rather, they are a symptom of anxiety.

How can subjective states be measured? One solution, proposed by psychometricians, is to ask people to rate how they are feeling relative to a number of statements (typically referred to as 'items'), each slightly different, but all intended to reflect aspects of the same underlying state. For instance, the *State-Trait Inventory*, a very well-known measure of anxiety, consists of items such as 'I feel nervous' or 'I feel calm', to which the respondent gives a rating of his/her agreement.⁹⁵ The average rating is then taken to reflect a measurement of the person's anxiety.

The models from *Classical Test Theory* which underpin this approach are based on the idea that people's real obtained scores on these sorts of tests are made up of an unknown true score – which represents the magnitude of the actual psychological property being measured – *plus* a certain amount of measurement 'noise' or 'error'. The size of the true score could only be known if the test subject completed every item in a theoretical 'relevant universe of items'.⁹⁶ This is a notional definition, in that no real questionnaire can contain the entire 'universe' of relevant items (imagine the size of a questionnaire that asked about anxiety in every possible way permitted by the English language!). The implication is therefore that some degree of error in measuring psychological states is unavoidable, but that the size of the error reduces, the more items a questionnaire contains.

The practical upshot of all this for well-being measurement is that attempting to assess a psychological state using a single question such as life satisfaction is to invite a

relatively high degree of measurement error. Combined with the observation that the multifaceted nature of well-being means that in reality, it is unlikely to consist of one single internal state, this makes a strong case for using a range of different measures.

Conceptual generality

A single life satisfaction question has often been regarded as a fairly good 'catch-all' measure of overall well-being. As we have seen, life satisfaction has been shown to correlate well with a number of standard objective measures which lend credence to its validity as a measure.

Conceptually, though, the generality of life satisfaction is a serious limitation on our ability to understand well-being. It is all very well knowing that someone is satisfied with their life, but the interesting question is *why*? What really *causes* someone to feel that life is going well or going badly? A moment's reflection reveals that many factors could be at work. One way to tackle these questions is to use statistical methods, such as regression, to determine the relative strength of the relationship between the objective conditions of a person's life and their life satisfaction. Such analysis has been the mainstay of research 'happiness economics', and a lot has been learned from it. We know, for example, that the material circumstances of a person's life are associated with their satisfaction, but that this association is fairly weak when compared with the strong role of family and social relationships.^{97,98,99}

But this approach to understanding well-being implies that a person's response to a question about subjective life satisfaction reflects the totality of everything else that happens in their life. This is an extremely strong theoretical assumption. Is it warranted? Recent research suggests that it is probably not. According to psychologist Daniel Kahneman, asking people about their life satisfaction tends to lead them to focus on "conventional status-bearing achievements", like having a decent income, a nice place to live and so on. They therefore focus less on things that are hard to recall and value relative to one another, such as time spent having fun, feeling happy, engaging in challenging activities, and so on.¹⁰⁰

If Kahneman is right, this skew towards status is a bias in the way people perceive the meaning of the life satisfaction question, rather than a true reflection of what really drives a sense of experienced well-being. People's real lives are rich and textured. Feeling happy, fulfilled, autonomous, capable, full of energy, loved and connected to other people are all experiences that people value in themselves – they have *intrinsic* value.¹⁰¹ Moreover, they are all experiences that have been shown by psychological research to be strongly associated with positive functioning across a range of life domains.¹⁰² This therefore suggests that directly measuring a number of these distinct feelings and experiences will enable a picture of people's well-being to be built up that is both far more accurate, and has considerably more explanatory power, than is possible simply from life satisfaction.

Sensitivity to policy

For the National Accounts of Well-being to be truly useful to policy makers, they must be able see how policy decisions impact on different facets of experienced well-being. However, average life satisfaction in the UK and in most developed countries has remained fairly flat over time – indeed this is one of the key findings that has pushed well-being up the policy agenda.

The underlying reasons for this static trend are hotly disputed in the research literature. Longitudinal studies using panel data (where the same person is asked the same questions at intervals over several years) show that subjective life satisfaction does move up and down over time, and predictably so in response to positive and negative life events. Being made unemployed, for example, is demonstrably bad for subjective life satisfaction.¹⁰³ A recent paper has argued that because the kind of events that lead to sustained rises or falls in life satisfaction (e.g. ill health, getting married or divorced, having a child) are distributed fairly evenly across the population, the pluses and minuses cancel out at the aggregate level.¹⁰⁴

Whatever the reason, however, the 'stickiness' of aggregate life satisfaction somewhat limits its usefulness as a policy measure, and points to the benefits likely to be derived from using more nuanced measures of well-being with clearer links to defined policy areas.

Appendix 2: How the indicators were calculated

Our aim in producing National Accounts of Well-being has been to develop a set of figures that can be used in the following ways:

- To look at different aspects of well-being separately, but also to aggregate so as to look at *overall* personal well-being and *overall* social well-being, and allow the possibility for a single composite well-being indicator.
- To compare between countries, between different demographic groups, and over time.
- To compare, for a given country, the different aspects of well-being.

As well as these specific aims, the national accounts indicators need to be easily interpretable, memorable, and robust.

Unsurprisingly, *no* methodology is able to fully meet all these requirements, but we believe we have developed a novel approach which offers the best possible solution for the National Accounts of Well-being. There are three stages to the process of producing indicator scores:

1. Standardisation
2. Aggregation
3. Transformation

Standardisation

One of the biggest problems with trying to bring together or compare different types of information is that they are measured in different units and on different scales. This is just as true when looking at survey data as any other information. For example, consider the following two questions included in the European Social Survey:

- a. How much of the time spent with your immediate family is enjoyable?
- b. To what extent do you feel that people treat you with respect?

In both cases, the response scales go from 0 to 6. However, for question a '0' means 'none of the time' and '6' means 'all of the time', whilst for question b '0' means 'not at all' and '6' means 'a great deal'. The two scales are not comparable. A '4' in question a is not necessarily the same as a '4' in question b. If the mean for a country is slightly higher, for example, on question a, this does not necessarily indicate that country has higher levels of family well-being than general levels of respect. Similarly, if we wanted to bring these questions together, alongside others that measure some aspect of social well-being, there is no way of knowing whether '4' in question a and '3' in question b is better or worse than '3' in question a and '4' in question b.

These problems exist for all types of data. For some well-known indicators, it is a bit easier to gauge their levels based simply on the numbers. For example, if a country had an average life expectancy of 45 years, and a literacy rate of 95 per cent, most people would agree that health was its primary concern. In the real world, however, comparison presents problems even for these indicators. Consider Gambia – where the life expectancy is 54 years, and the literacy rate is 38 per cent. Which indicator represents the more pressing concern? Perhaps an expert on development would be able to immediately recognise that it is Gambia's literacy rate that is particularly low, but the rest of us would find this hard to spot immediately.

This is why standardisation is useful. It gives us some way of comparing apples with oranges. Scores for each question are transformed such that they are expressed in the same terms: the distance from the mean for that question. Questions where higher figures indicated lower well-being are reversed such that higher numbers now indicate higher well-being. Standardisation follows the standard equation:¹⁰⁵

$$z\text{-score} = \frac{x - \bar{x}}{\sigma}$$

\bar{x} is the mean of all responses
 σ is the standard deviation for all responses

The unit for standardised scores (also called z-scores) is a standard deviation. So, for example, a z-score of 2.0 on a certain question would indicate that an individual's response was 2 standard deviations above the mean response for that question. A z-score of -0.5 would indicate that their response was half a standard deviation below the mean for that question. A z-score of 0.0 would indicate the individual's response is the mean for that question. This allows direct comparison to be made between responses to different questions. If an individual's z-score for question 1 is higher than their z-score for question 2, then we can be sure that their relative 'family enjoyment' is higher than their relative 'feelings of respect'.

It is vital to note the use here of the word *relative*. Standardising the scores provides no way of knowing absolute levels. If everyone says that they find no time with their family enjoyable (i.e. '0' on the 0–6 scale), someone who circles '1' (still very low of course) will come out with a positive z-score. By the same token, standardising implies that we cannot compare scores for different questions for the dataset as a whole. The means for Europe for all questions (using z-scores) will be 0 – we are not able to say that Europe as a whole is doing well on one aspect of well-being or another. We can only make comparisons within Europe, between countries, individuals, or demographic groups and, if data are collected for future years, over time. If identical data are collected for other countries in the world, we would be able to draw conclusions about Europe as a whole, but again, these would be relative to the rest of the world. However, without absolute targets of what high well-being looks like (in terms of survey data), and without absolute reference points to allow comparison between different aspects of well-being, nothing else is possible. This problem is not unique to well-being data. Without a reference point, there is no way of knowing that Angola's GDP of £3,440 per capita in 2007 is likely to be associated with poor living standards. Indeed, in 1950, such a level of GDP per capita would have actually been quite high, around that seen in Italy. We cannot conclude from this that living conditions in Angola now are similar to those in Italy in 1950. The only way that we can understand £3,440 per capita is in comparison to figures for other countries.

A few further technical details are necessary for those wishing to replicate our methodology. We calculated z-scores for each question based on the weighted European Social Survey Round 3 edition 3.1 dataset. We used the dataset for the whole of Europe, excluding Russia, and excluded any respondents who had missing data on any of the questions included in the accounts.¹⁰⁶ Russia was excluded because, although there were no more respondents in Russia than in any other country, its large population means that it is weighted very highly (a quarter of the total weighted count for Europe). This high weight could lead to distortion of our analysis. As conditions in Russia are not typical in 'Europe', and indeed much of Russia is not geographically in Europe, we decided not to include it in the national accounts. However, the data are available to allow comparable Russian National Accounts of Well-being scores to be calculated.

For comparison to be possible beyond our dataset, to Russia, to respondents to the survey on the National Accounts of Well-being website, and to potential future waves of the European Social Survey, it is important that new data are standardised using the same parameters. So when an individual completes the online survey, his/her scores are based on 'standardising' using the means and standard deviations from the data presented in this report. In other words, these data serve as a benchmark.

Aggregation

Once the scores for individual questions have been standardised, the next task is determining how to aggregate them to measure well-being constructs (our indicators). Aggregation is important for the same sort of reasons which Appendix 1 discusses as motivating the move away from the single, life satisfaction question. Conceptually, it reflects the fact that our understanding of complex constructs such as 'autonomy' or 'vitality' cannot always be satisfactorily captured with a single question. Rather than putting all our conceptual eggs in the basket of a single survey question, it is often better to ask several different questions which capture the well-being construct we want to measure in different ways. And as Appendix 1 shows, using several questions to tap a single construct also has advantages in terms of measurement theory, in reducing the risk that bias or error on a single question might distort the final scores.

There is still no agreed theory as to how to structure well-being indicators. The hierarchical structure presented earlier in Figure 1 can be seen as a compromise between various theoretical models and the available data. For example, as many authors have done, we have distinguished between 'evaluative' measures of well-being – the aspects we have called *satisfying life*, *emotional well-being* (also called 'affect balance' or 'hedonic well-being'), and *positive functioning* – sometimes called *flourishing* or *eudaimonia*.¹⁰⁷ However, we have gone a little further in separating out *vitality*, and also in identifying a set of well-being 'resources', which we have labelled *resilience and self-esteem* – *resilience*, *optimism* and *self-esteem*, as recommended in the recent Foresight Commission report on well-being.¹⁰⁸ We have also recognised a clear and fundamental distinction between personal and social well-being, although the questions included in the survey do not permit us to base our indicator structure on a thorough model of social well-being.¹⁰⁹ Under *positive functioning*, we have acknowledged theories which identify *autonomy* and *competence* as universal psychological needs for high well-being,¹¹⁰ and also measure *engagement* (or 'flow') and *meaning and purpose*.¹¹¹

The structure we present reflects the shape of human needs and experiences. For the most part it cuts across life-domains – the areas of life that we normally talk about, such as family, work and politics. Well-being in terms of the constructs we have included in the hierarchy can be affected by all such life-domains, and these life-domains can have an effect on several well-being constructs. For example, your family life has obvious implications for the social well-being indicators, but it also has implications for your sense of meaning and purpose, your vitality, and indeed most of the other indicators included in the accounts.

An attempt to use the statistical patterns of the responses to validate our structure was made using factor analyses; however these were dominated by response code effects and did not provide conclusive evidence about the underlying structure of well-being. Furthermore, factor analysis suggests that attempting to statistically determine a structure based on a cross-national sample may not be appropriate, as there are substantial differences in the shape of well-being for different nations, and these differences may distort the overall picture.

For the main accounts, the hierarchical structure consists of three levels. The bottom level is that of subcomponents, which are composed directly from the standardised scores from individual questions. These subcomponents are then combined to produce component scores. In many cases (for example the *satisfying life* component), components are not formed of subcomponents – but rather directly from individual question scores. Last, components are brought together to produce the overall personal and social well-being scores. For the *well-being at work* satellite indicator, a single score is produced directly from the six questions on work.

At each level, the higher level indicator score is calculated by simply taking the unweighted mean of the z-scores for the lower level indicators or questions. Appendix 3 shows the wording of the original survey questions and how they were aggregated into subcomponent and component indicators.

Transformation

The result of the above process is a set of 19 indicator scores for each survey respondent. Each score is the mean of a set of z-scores – as such, for each indicator, the mean across Europe for all respondents is 0, though the standard deviation is not necessarily 1. This makes comparison easy. If an individual has a positive mean for *positive functioning* for example, then one immediately knows that their functioning is better than the European average. If their score for *vitality* is lower than their score for *positive emotions*, then one can say that, relative to Europe, low vitality is more of an issue for them than lack of positive emotions.

These aggregated standardised scores are used for all the analyses presented in this report, and we recommend that other analysts do the same. For presentation purposes, however, these scores are not ideal. Most people are not used to dealing with z-scores, and it is never clear what the minimum and maximum scores are. To resolve this issue we have developed a transformation metric that maps the z-scores for each indicator onto 0–10 scales, where a '0' is the minimum for that indicator, '10' is the maximum, and '5' is the mean for Europe.

Because there tends to be a negative skew in responses to measures of subjective well-being, with more people giving answers higher up the response scale than lower down, answers at the lower end of the scale will be further from the mean, and therefore be of greater magnitude when converted into z-scores, than those at the upper end. This means that any transformation to a 0–10 scale where '5' is set as the mean is not likely to be linear (of the form $y=mx+c$).

This is clear looking at Figure 16, which shows the requirements that need to be met in recoding z-scores into transformed scores for a hypothetical indicator. The formula of the line connecting the three points would be the transformation formula. As we can see, a straight line cannot fit. Rather than having a crooked dogleg as shown in Figure 16 (a 'discontinuity' in technical terms), we sought a curvilinear relationship as shown in Figure 17.

This relationship is described in the following formula:

$$t_i = \frac{z_i \times 5}{z_i \times m_i + c_i} + 5$$

where z_i is the z-score that we want to transform, t_i is the transformed score, and m_i and c_i are determined from the *theoretical* minimum and maximum z-scores for the indicator in question as follows:

$$m_i = \frac{\min_i + \max_i}{\min_i - \max_i} \quad c_i = \frac{\min_i \times \max_i \times 2}{\min_i - \max_i}$$

(min will of course be a negative value, and max a positive)

In effect, what this transformation does is to let the scaling factor by which the z-scores are multiplied alter across the range of possible scores. The statistical effect of transforming the data in this way is to reduce the inevitable skew which is always found in survey data of this kind. In doing so, responses at the upper end of the distribution (which is typically where most respondents are), are spread out, allowing us to 'zoom in'.

Transformation should always be done at the last possible moment before presenting data, as the curvilinear relationship can distort patterns. For example, to get the mean score for a particular country on a particular indicator, the average of the z-scores across all individuals should first be calculated, and only *then* transformed; rather than transforming the z-scores for each individual and then taking the average.

Figure 16. Hypothetical linear relationship between transformed scores and z-scores.

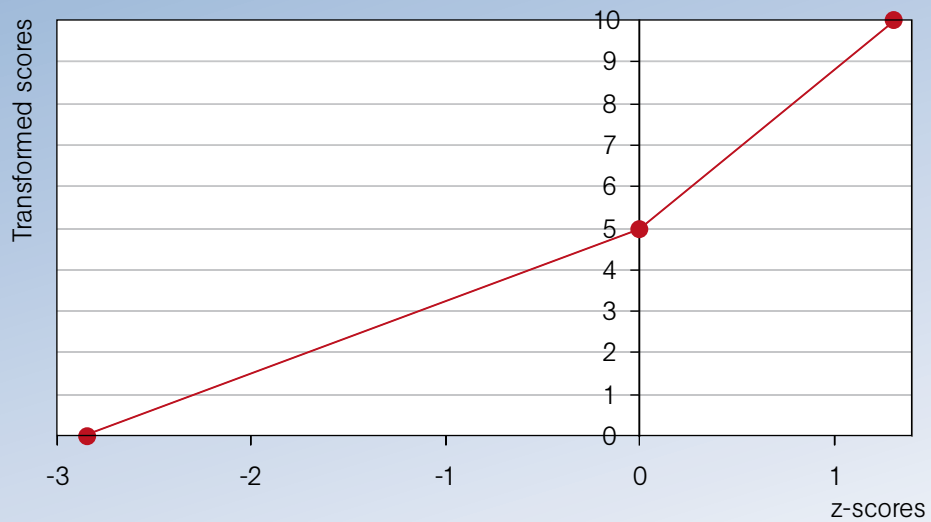
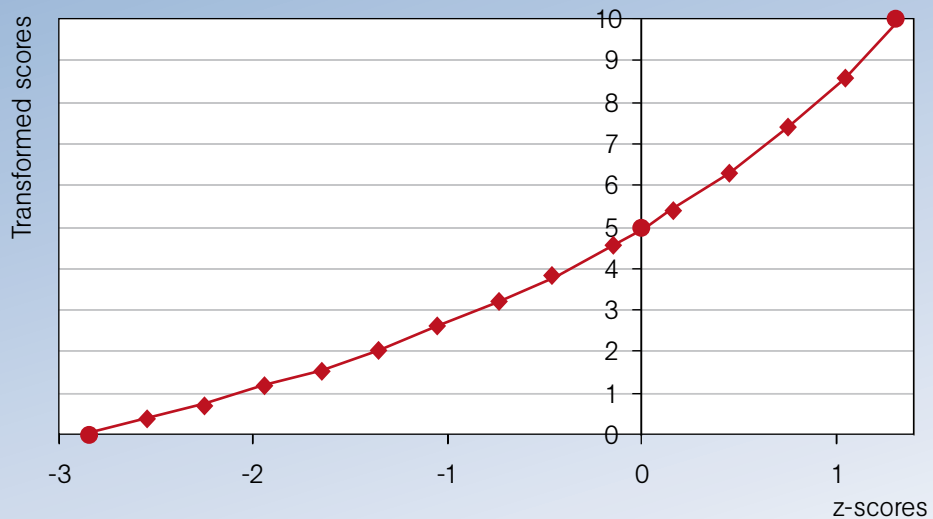


Figure 17. Curvilinear relationship between transformed scores and z-scores.



Even taking these precautions, we acknowledge that we need to be careful about interpreting the distribution of transformed scores. The curvilinear transformation results in scores at one end of the distribution being stretched more than those at the other end. This means that standard deviations, for example, of countries with higher scores, are likely to be distorted upwards. As the results section shows, however, this pattern was not in fact found in our data, so it appears that this distortion does not have too much effect. Furthermore, being overly concerned with the distortion would imply absolute faith that the original scales used in the questions are linear. Such faith would be ill-founded. For example, it is not necessarily the case that the difference between 'all or almost all of the time' (a response scored as '4' for some questions) and 'most of the time' (scored as '3'), is the same as the difference between 'most of the time' ('3') and 'some of the time' ('2').

Appendix 3: European Social Survey question aggregation

The following table shows the original European Social Survey questions, and how they were aggregated to create the subcomponent and component indicators. Question scales were aligned, based on question wording and original numbering to invert scales where appropriate, so that a high score always represents a positive answer. The aligned scale used for each survey question is shown (with 'inv' indicating questions where the scale was inverted), and the value of the mean and standard deviation calculated according to the aligned scale.

Question	Component (subcomponent)	Aligned scale	Mean (on aligned scale)	Standard deviation
Taking all things together, how happy would you say you are?	Emotional well-being (<i>positive feelings</i>)	0–10	7.27	1.92
How much of the time during the past week were you happy?	Emotional well-being (<i>positive feelings</i>)	1–4	2.91	0.80
How much of the time during the past week have you enjoyed life?	Emotional well-being (<i>positive feelings</i>)	1–4	2.88	0.84
How much of the time during the past week have you felt depressed?	Emotional well-being (<i>absence of negative feelings</i>)	1–4 (inv)	3.50	0.70
How much of the time during the past week have you felt sad?	Emotional well-being (<i>absence of negative feelings</i>)	1–4 (inv)	3.43	0.68
All things considered, how satisfied are you with life as a whole nowadays?	Satisfying life	0–10	6.83	2.29
How satisfied are you with how your life has turned out so far?	Satisfying life	0–10	7.08	1.93
How satisfied are you with your present standard of living?	Satisfying life	0–10	6.66	2.19
On the whole my life is close to how I would like it to be (agree – disagree)	Satisfying life	1–5 (inv)	3.54	0.96
How much of the time during the past week have you felt tired?	Vitality	1–4 (inv)	2.95	0.74
How much of the time during the past week have you felt that everything you did was an effort?	Vitality	1–4 (inv)	3.27	0.78
How much of the time during the past week could you not get going?	Vitality	1–4 (inv)	3.44	0.71
How much of the time during the past week has your sleep been restless?	Vitality	1–4 (inv)	3.22	0.86
How much of the time during the past week have you had a lot of energy?	Vitality	1–4	2.60	0.87
How much of the time during the past week have you felt rested when you woke up in the morning?	Vitality	1–4	2.45	0.95
How is your health in general?	Vitality	1–5 (inv)	3.76	0.90
My life involves a lot of physical activity (agree – disagree)	Vitality	1–5 (inv)	3.25	1.18

Question	Component (subcomponent)	Aligned scale	Mean (on aligned scale)	Standard deviation
In general I feel very positive about myself (agree – disagree)	Resilience and self-esteem (<i>self-esteem</i>)	1–5 (inv)	3.85	0.81
At times I feel as if I am a failure (agree – disagree)	Resilience and self-esteem (<i>self-esteem</i>)	1–5	3.73	1.07
I'm always optimistic about my future (agree – disagree)	Resilience and self-esteem (<i>optimism</i>)	1–5 (inv)	3.67	0.94
When things go wrong in my life, it generally takes me a long time to get back to normal (agree – disagree)	Resilience and self-esteem (<i>resilience</i>)	1–5	3.29	1.05
In my daily life I get very little chance to show how capable I am (agree – disagree)	Positive functioning (<i>competence</i>)	1–5	3.16	1.03
Most days I feel a sense of accomplishment from what I do (agree – disagree)	Positive functioning (<i>competence</i>)	1–5 (inv)	3.81	0.79
In my daily life, I seldom have time to do the things I really enjoy (agree – disagree)	Positive functioning (<i>autonomy</i>)	1–5	3.00	1.08
I feel I am free to decide how to live my life (agree – disagree)	Positive functioning (<i>autonomy</i>)	1–5 (inv)	3.94	0.89
How much of the time during the past week have you felt bored?	Positive functioning (<i>engagement</i>)	1–4 (inv)	3.58	0.65
How much of the time during the past week have you been absorbed in what you were doing?	Positive functioning (<i>engagement</i>)	1–4	2.57	0.90
To what extent do you get a chance to learn new things?	Positive functioning (<i>engagement</i>)	0–6	3.93	1.52
To what extent do you feel that you get the recognition you deserve for what you do?	Positive functioning (<i>meaning and purpose</i>)	0–6	3.94	1.31
I generally feel that what I do in my life is valuable and worthwhile (agree – disagree)	Positive functioning (<i>meaning and purpose</i>)	1–5 (inv)	3.95	0.73
How much of the time spent with your immediate family is enjoyable?	Supportive relationships	0–6	5.10	1.05
How much of the time spent with your immediate family is stressful?	Supportive relationships	0–6 (inv)	4.17	1.58
How often do you meet socially with friends, relatives or colleagues?	Supportive relationships	1–7	5.03	1.54
There are people in my life who really care about me (agree – disagree)	Supportive relationships	1–5 (inv)	4.35	0.73
Do you have anyone with whom you can discuss intimate and personal matters?	Supportive relationships	1–2 (inv)	1.92	0.27
How much of the time during the past week have you felt lonely?	Supportive relationships	1–4 (inv)	3.60	0.70
To what extent do you feel that people in your local area help one another?	Trust and belonging	0–6	3.41	1.56
To what extent do you feel that people treat you with respect?	Trust and belonging	0–6	4.43	1.16
I feel close to the people in my local area (agree – disagree)	Trust and belonging	1–5 (inv)	3.50	0.97
To what extent do you feel that people treat you unfairly?	Trust and belonging	0–6 (inv)	4.33	1.39
Most people can be trusted, or you can't be too careful?	Trust and belonging	0–10	4.90	2.36

Question	Component (subcomponent)	Aligned scale	Mean (on aligned scale)	Standard deviation
All things considered, how satisfied are you with your present job?	Well-being at work	0–10	7.03	2.19
How satisfied are you with the balance between the time you spend on your paid work and the time you spend on other aspects of your life?	Well-being at work	0–10	5.94	2.31
How much of the time do you find your job interesting?	Well-being at work	0–6	4.39	1.38
How much of the time do you find your job stressful?	Well-being at work	0–6 (inv)	2.67	1.71
How likely would you say it is that you will become unemployed in the next 12 months?	Well-being at work	1–4 (inv)	3.28	0.82
Considering all my efforts and achievements in my job, I feel I get paid appropriately?	Well-being at work	1–5	3.01	1.18

Appendix 4: Country scores for all indicators

Country	Personal Well-Being													Social Well-Being				Well-being at work			Combined Well-Being Indices			
	Overall	Transformed Standard Deviation	Emotional well-being	Positive feelings	Absence of negative feelings	Satisfying life	Vitality	Resilience and self-esteem	Self-esteem	Optimism	Resilience	Positive functioning	Competence	Autonomy	Engagement	Meaning and purpose	Overall	Transformed Standard Deviation	Supportive relationships	Trust and belonging	Overall	2:1 personal	1:1	Lowest score
Denmark	5.96	1.4	6.1	5.8	6.7	6.7	5.4	5.5	5.0	5.7	5.9	6.1	6.2	5.9	6.4	6.1	5.89	1.3	6.0	5.9	5.7	5.94	5.93	5.89
Switzerland	5.80	1.2	5.8	5.9	5.7	6.3	5.7	5.5	5.4	5.7	5.6	5.6	5.8	5.3	5.7	5.7	5.52	1.2	5.4	5.6	5.5	5.71	5.66	5.52
Norway	5.61	1.3	6.0	5.6	6.7	5.9	5.6	5.1	4.3	5.2	5.9	5.5	5.7	5.6	5.4	5.5	5.77	1.2	5.5	6.0	5.5	5.66	5.69	5.61
Ireland	5.50	1.4	5.9	5.8	6.1	5.7	5.4	5.3	5.2	5.6	5.2	5.3	5.4	5.3	5.0	5.5	5.37	1.4	5.3	5.5	5.4	5.46	5.44	5.37
Austria	5.61	1.5	5.4	5.4	5.4	5.9	5.7	5.4	5.4	5.8	5.1	5.6	5.7	5.7	5.5	5.4	5.13	1.4	5.0	5.2	5.5	5.45	5.37	5.13
Sweden	5.45	1.3	5.6	5.3	6.2	6.0	5.3	5.1	4.4	5.4	5.6	5.3	5.6	5.2	5.0	5.3	5.44	1.2	5.2	5.6	5.2	5.44	5.44	5.44
Finland	5.52	1.3	5.9	5.3	7.1	6.1	5.4	4.9	3.9	5.3	5.7	5.4	5.4	5.5	5.5	5.3	5.26	1.2	5.1	5.4	5.2	5.43	5.39	5.26
Netherlands	5.33	1.3	5.5	5.6	5.6	5.5	5.3	5.0	4.8	4.9	5.1	5.4	5.2	5.6	5.5	5.2	5.30	1.3	5.4	5.2	5.6	5.32	5.31	5.30
Spain	5.12	1.3	5.2	5.3	5.0	5.5	4.9	5.2	5.5	5.1	5.1	4.8	4.6	5.0	4.3	5.1	5.58	1.3	5.8	5.5	5.2	5.26	5.34	5.12
Cyprus	5.30	1.3	5.3	5.3	5.4	5.4	5.5	5.5	5.8	6.3	4.5	4.9	5.1	4.9	3.9	5.4	4.93	1.2	4.9	4.9	5.9	5.18	5.12	4.93
Belgium	5.16	1.5	5.3	5.4	5.2	5.4	5.1	4.8	4.7	4.7	4.9	5.2	5.1	5.2	5.3	5.2	4.92	1.4	5.0	4.9	5.4	5.08	5.04	4.92
Germany	5.14	1.4	4.9	4.6	5.4	5.1	5.2	5.4	5.7	5.3	5.2	5.1	5.4	4.9	5.4	4.8	4.88	1.3	4.7	5.0	4.9	5.05	5.01	4.88
UK	5.07	1.4	5.4	5.4	5.4	5.4	4.8	4.9	4.7	5.0	5.2	4.9	4.9	5.1	4.7	4.8	4.90	1.3	5.2	4.7	5.0	5.01	4.98	4.90
Slovenia	5.04	1.3	5.1	5.2	5.1	5.1	5.2	5.0	5.1	5.4	4.4	4.9	4.8	5.1	4.7	4.8	4.78	1.2	4.7	4.8	5.0	4.95	4.91	4.78
France	4.97	1.4	5.2	5.3	5.0	4.9	5.1	4.7	4.8	4.3	5.0	5.0	4.7	4.9	5.3	5.2	4.80	1.3	4.8	4.8	5.1	4.91	4.88	4.80
Poland	4.79	1.5	4.5	4.6	4.4	4.8	5.0	4.8	4.9	4.8	4.8	4.8	4.7	4.8	4.8	4.9	4.83	1.3	4.9	4.8	4.4	4.80	4.81	4.79
Estonia	4.71	1.3	4.5	4.5	4.4	4.5	5.0	4.7	4.1	5.1	4.8	4.9	4.8	5.0	4.8	5.0	4.90	1.3	4.9	4.9	4.8	4.77	4.80	4.71
Portugal	4.52	1.3	4.4	4.5	4.2	4.2	4.4	4.9	5.3	4.7	4.8	4.7	4.5	4.7	4.3	5.0	5.31	1.3	5.6	5.2	5.0	4.76	4.89	4.52
Hungary	4.41	1.5	3.9	4.4	3.2	4.1	4.4	4.6	4.5	4.5	4.7	5.2	5.2	4.9	5.4	5.3	5.10	1.6	4.4	5.6	4.8	4.63	4.74	4.41
Slovakia	4.50	1.3	4.3	4.6	3.9	4.3	4.7	4.4	3.8	4.8	4.7	4.8	4.7	4.9	4.8	4.7	4.64	1.3	4.6	4.6	4.7	4.55	4.57	4.50
Bulgaria	4.30	1.6	3.9	3.6	4.1	3.3	4.9	4.7	5.3	5.2	3.6	4.9	5.0	4.9	4.5	5.0	4.91	1.4	5.3	4.7	4.7	4.49	4.59	4.30
Ukraine	4.17	1.5	4.0	4.2	3.8	3.2	4.5	4.6	4.5	5.3	4.0	4.7	4.7	4.5	4.7	4.8	4.61	1.5	4.4	4.7	4.5	4.31	4.39	4.17

Endnotes

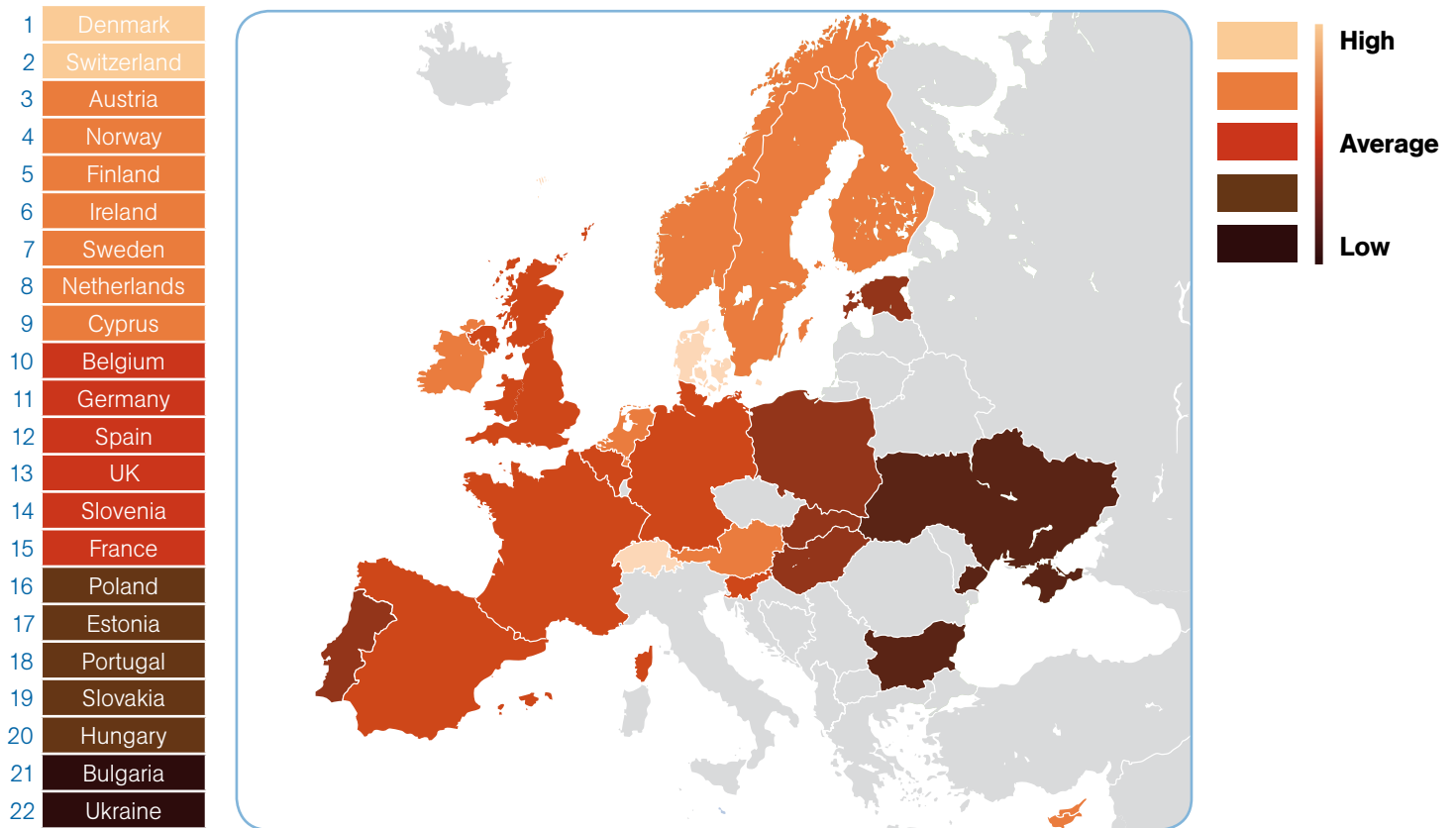
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- 61 The full application proposal is available at www.europeansocialsurvey.org
- 62 Huppert *et al.* (2008) *op. cit.*
- 63 Direction of arrows shows direction of change in ranking position between the scores. One arrow indicates a change of between 1 to 3 ranking places, two arrows a change between 4 to 8 places, and three arrows 9 or more places.
- 64 The countries in each region are: UK and Ireland; Western Europe – Austria, Belgium, Switzerland, Germany, France, Netherlands, Switzerland; Southern Europe – Cyprus, Spain, Portugal; Central and Eastern Europe – Bulgaria, Estonia, Hungary, Poland, Slovakia, Slovenia, Ukraine; Scandinavia – Denmark, Finland, Norway, Sweden.
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- 71 Income bands were converted from amount in Euros at 1 November 2006 rates.
- 72 ESS questions on values orientation were used to derive a measure of how far people are oriented towards 'intrinsic goals', which are inherently rewarding and do not depend on external validation and 'extrinsic goals' which, by contrast, are typically pursued as a means to some external reward, for instance financial success, image or popularity/status. The methodology used to derive this measure is set out in the following paper given by nef researchers: Abdallah S and Thompson S (2008) 'Psychological barriers to de-growth: Values mediate the relationship between well-being and income' *Proceedings of the First International Conference on Economic De-Growth for Ecological Sustainability and Social Equity*, Paris, April 2008.

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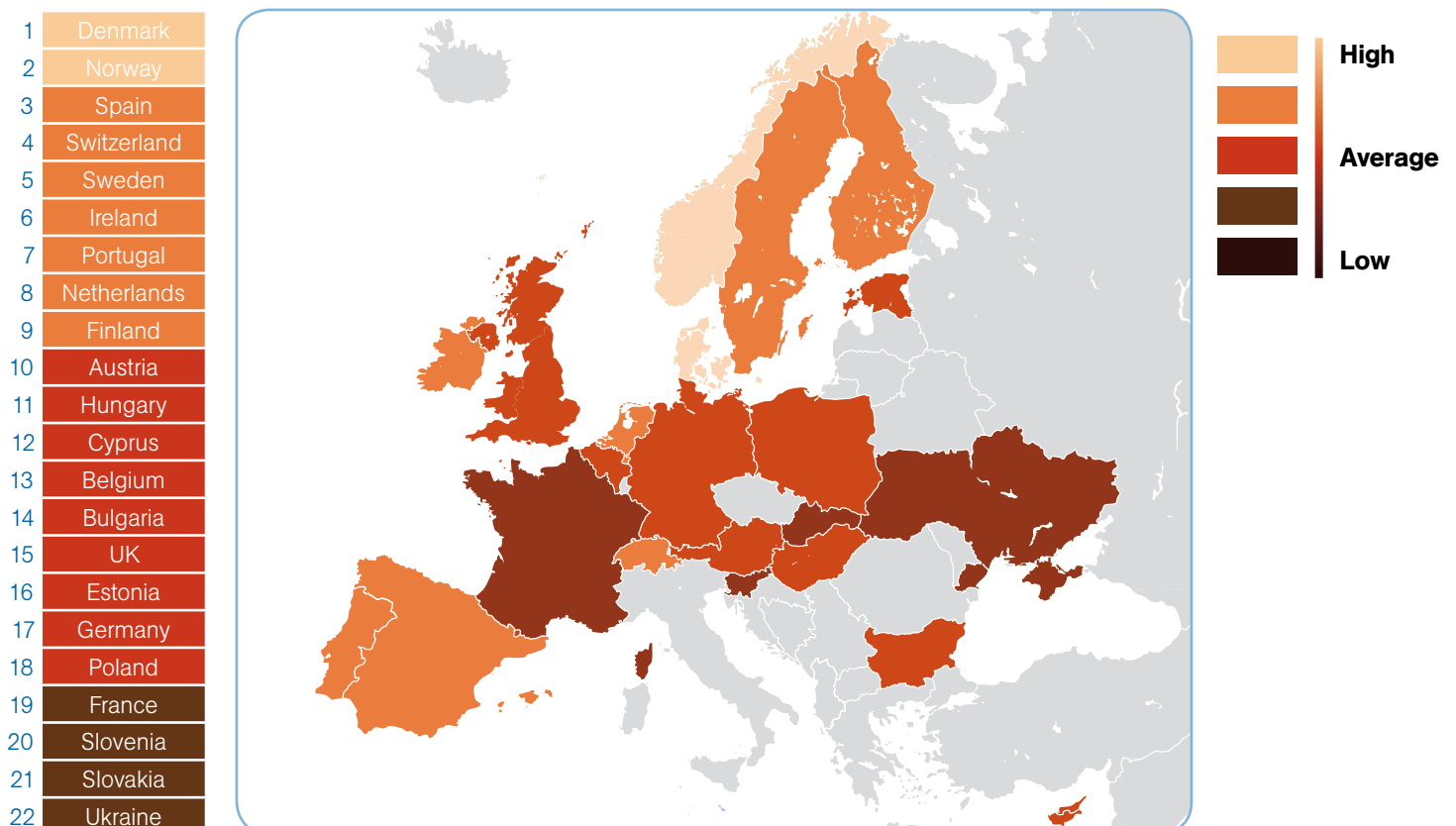
Personal well-being

Measures people's experiences of their positive and negative emotions, satisfaction, vitality, resilience and self-esteem and sense of positive functioning in the world.



Social Well-being

Measures people's experiences of supportive relationships and sense of trust and belonging with others.





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Special thanks to: Richard Layard, Richard Easterlin, Ed Diener, John Helliwell, Hetan Shah, Roger Jowell and colleagues Rory Fitzgerald, Gillian Eva and Caroline Roberts at City University London, Enrico Giovannini and Jon Hall at the OECD, Felicia Huppert and colleagues Anne Maria Gadermann, Rosemary Abbott, Anke Zimmerman at the University of Cambridge, Rich Aston and Jonathan Briggs at the OTHER media, and Katrin Hohl.

Edited by: Mary Murphy

Design by: the Argument by Design – www.tabd.co.uk

nef's work on National Accounts of Well-being is supported by the AIM Foundation.

This report is dedicated to the memory of our friend and colleague Nat McBride who died unexpectedly in the summer of 2008. Nat would have contributed so much to this project, and we have missed him hugely throughout.

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Registered charity number 1055254

© January 2009 **nef** (the new economics foundation)

ISBN 978 1 904882 50 3